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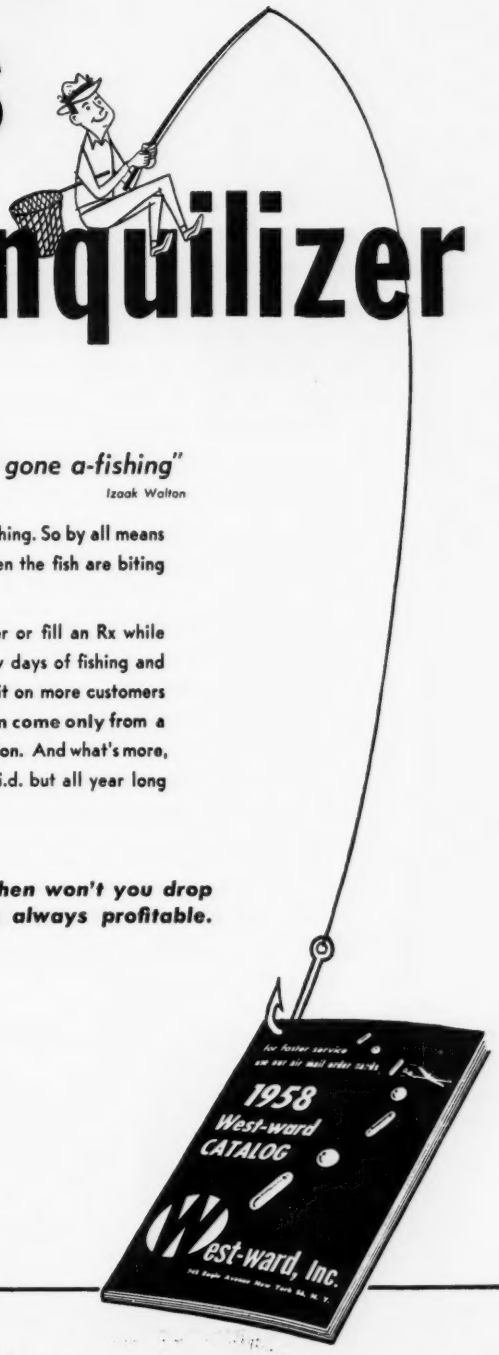

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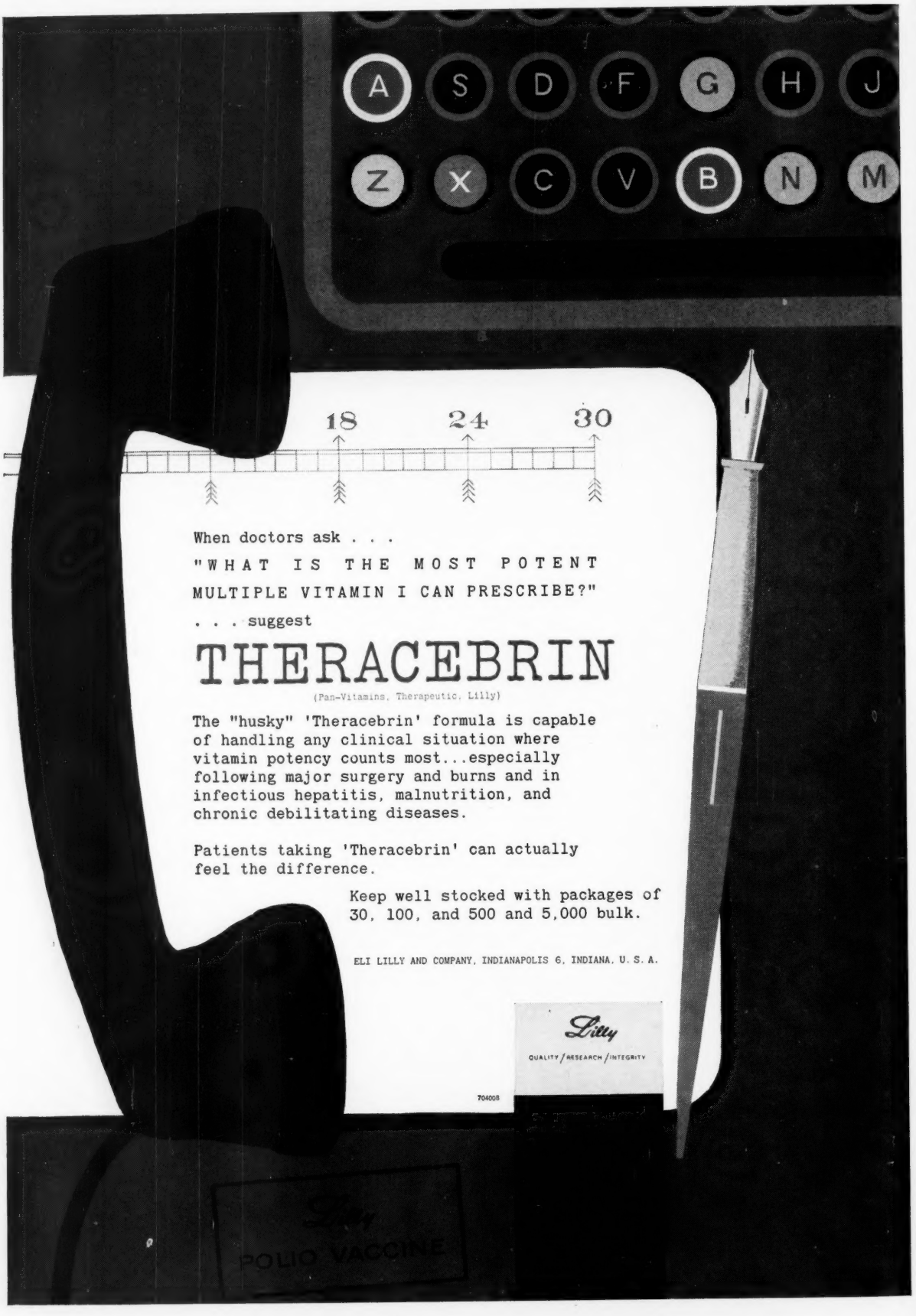
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Journal
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Practical Pharmacy Edition

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This Journal is the official monthly publication of the AMERICAN PHARMACEUTICAL ASSOCIATION, dedicated to the elevation and unification of the profession of Pharmacy through communication of authoritative scientific, professional, and cultural information. It is devoted to the education of pharmaceutical practitioners, and it functions as the professional voice of Pharmacy, which is directed to all members of the profession of Pharmacy in education, government, industry, and professional practice.

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Washington Views

George V. Allen, Director of U.S. Information Agency, says that history is whispering to the human race: "All right. You have outstripped all previous records in scientific achievement. You have now the means by which you can destroy yourselves utterly. The time has arrived when you must learn to get along with each other peacefully or perish. You have no choice."

Resolutions favoring collective bargaining for nurses associated with hospitals and approving compulsory health insurance in principle were passed by the American Nurses Association at their recent convention.

Regulatory agencies of the Federal Government such as the Federal Trade Commission and the Food and Drug Administration are unable to accomplish a really effective policing job to protect the public from harmful products and misleading claims for such items as cigarettes, dentifrices, and weight reducers because their funds and manpower have not been increased to keep pace with population growth and scientific development, according to testimony before Congressional committees.

The mental and physical health problems involved in housing human beings in a capsule for long periods of time in outer space where human wastes must be purified and reused are being investigated. Two new contracts directed toward solution of space flight problems totaling $400,000 have been let by the Air Force Research and Development Command.

Spokesmen for the Federal Trade Commission, appearing before the Blatnik Subcommittee investigating misleading advertising, say they have no record of any dentifrice having produced a harmful effect, and although witnesses appearing for the American Dental Association say that misleading claims for dentifrices create a false sense of security about tooth decay, gum disease, bad breath, and serious system diseases, the Federal Trade Commission says advertisements do good in getting people to use a toothbrush, which is after all the most important factor in removing decaying food particles from between the teeth.

Under authority of Reorganization Plan No. 1 of 1958, President Eisenhower has by executive order established a new Office of Defense and Civilian Mobilization to replace the former Office of Defense Mobilization and the Federal Civil Defense Administration.

Last Minute News

The stock of American Cyanamid Co. rose nearly $7 per share in one day when it was reported that its Lederle Laboratories Division's anti-cancer chemical Methotrexate had shown real promise in clinical use for a fatal form of cancer of the uterus.

A booming industrial expansion in Pharmacy, increased stockpiles of critical drugs, rising retail prices, and a strong upturn in business with higher incomes are appearing on the horizon as the current threat of war takes effect.

The Food and Drug Administration, in its battle to protect the public against indiscriminate self-medication, largely prompted by consumer advertising, has suffered a temporary setback, now that certain rheumatism-arthritis claims within limits are permitted on some proprietary medicines.

Pharmacists in the Ready Reserve, including those in the six-month training plan, will be called to active duty promptly whenever Congress declares a full-scale emergency.

While Congressional hearings which revealed the hazards of smoking were in progress it was interesting to see some members of the Committee and some witnesses smoking continually.

The Tobacco Institute, Inc. was on very strong ground when it pointed out recently that statistical evidence indicating a direct relationship between cigarette smoking and lung cancer is not conclusive proof. On the other hand the scientific method is based on establishing cause and effect relationships by means of statistical analysis of accumulated data. Strong relationships such as that shown between higher death rate and smoking, and lung cancer and smoking, are usually verified eventually if the data have been collected by means of carefully-designed questionnaires.

Important posts in Pharmacy to be filled now include the Secretaryship of the Pennsylvania Pharmaceutical Association and the deanships at the Schools of Pharmacy at Oregon State College and the University of Pittsburgh.

The U.S. Office of Education has just reported increased school and college enrollments for the 13th consecutive year. The 1957–58 enrollment totaled 43,135,000 or about 1 out of every 4 in the Nation. Of all persons between 6 and 17 years old 96.5% were enrolled in schools. College conferred a total of 411,000 degrees in 1956–57, 82.8% of which were bachelors, 15.1% masters, and 2.1% doctors.

A group of special consultants to the Secretary of Health, Education, and Welfare said expenditures for medical research in this country should be tripled to reach $1,000,000,000 a year by 1970.

According to the U.S. National Health Survey the number of days the American people stayed home from work, stayed in bed, or otherwise cut down on normal activities amounted to about 16 days per person per year.

Beginning in January 1959 the Bureau of the Census, U.S. Department of Commerce, will conduct six nation-wide censuses over a period of 18 months.

A new virus-killing antibiotic, mitomycin C, cures leukemia in mice.

A 5-year study just released by the National Office of Vital Statistics indicates drowning as second only to machinery as the cause of accidental deaths on farms.

The incidence of leukemia and other malignant diseases in early childhood may be increased by the diagnostic use of pelvic X-rays late in pregnancy, according to Dr. Edward L. King, of the School of Medicine, Tulane University.

Dr. Robert L. Baker has recently received the first Ph. D. awarded in space navigation in the only curriculum of its type at the University of California at Los Angeles.

Half of all retired couples receiving Social Security benefits received a total income of $2,190 last year.

The American Red Cross points out that among 35,000,000 boating enthusiasts owning 7,100,000 small recreational craft there are 1,400 water fatalities each year.

Farm accidents take about 13,000 lives a year among rural residents in the United States says a recent report.

A two-year study of womanpower made by the National Manpower Council of Columbia University indicates some 28,000,000 women or 1 out of every 3 workers are in paid employment, and that by 1965 this number should approach 33,000,000.

The Federal Government spent $2,782,000,000, for research and development during the last fiscal year just ended.

Three Japanese scientists at the Mie Prefectural University School of Medicine, Tsu, have discovered a simple blood test for cancer growth in the human body based on the indentification of malignolipin, a new phospholipid, that is not found in normal tissue.

At the recent AMA Convention in San Francisco a resolution passed by the AMA House of Delegates commended the Food and Drug Administration for its meritorious service to the public, pledged the fullest cooperation of the AMA, and recommended all States to review their State laws with a view to strengthening them to bolster the FDA. Another resolution took a dim view of the extensive promotion of remedies for self-medication, used for treating indigestion, constipation, and anemia. The AMA opposed this dangerous practice because it tended to postpone diagnosis of serious diseases.

The 26th Annual (1947) Edition of the Lilly Digest now being distributed summarizes 2,142 retail pharmacy income and expense statements. It shows that the increase of the record 1947 sales over the preceding year was the highest ever reported by the Lilly Digest. Averages for number of prescriptions filled, precription income, gross margin, proprietor's salary, and net profit were at record high levels. Yet a new high for operating costs resulted in a decline in net profit percentage.

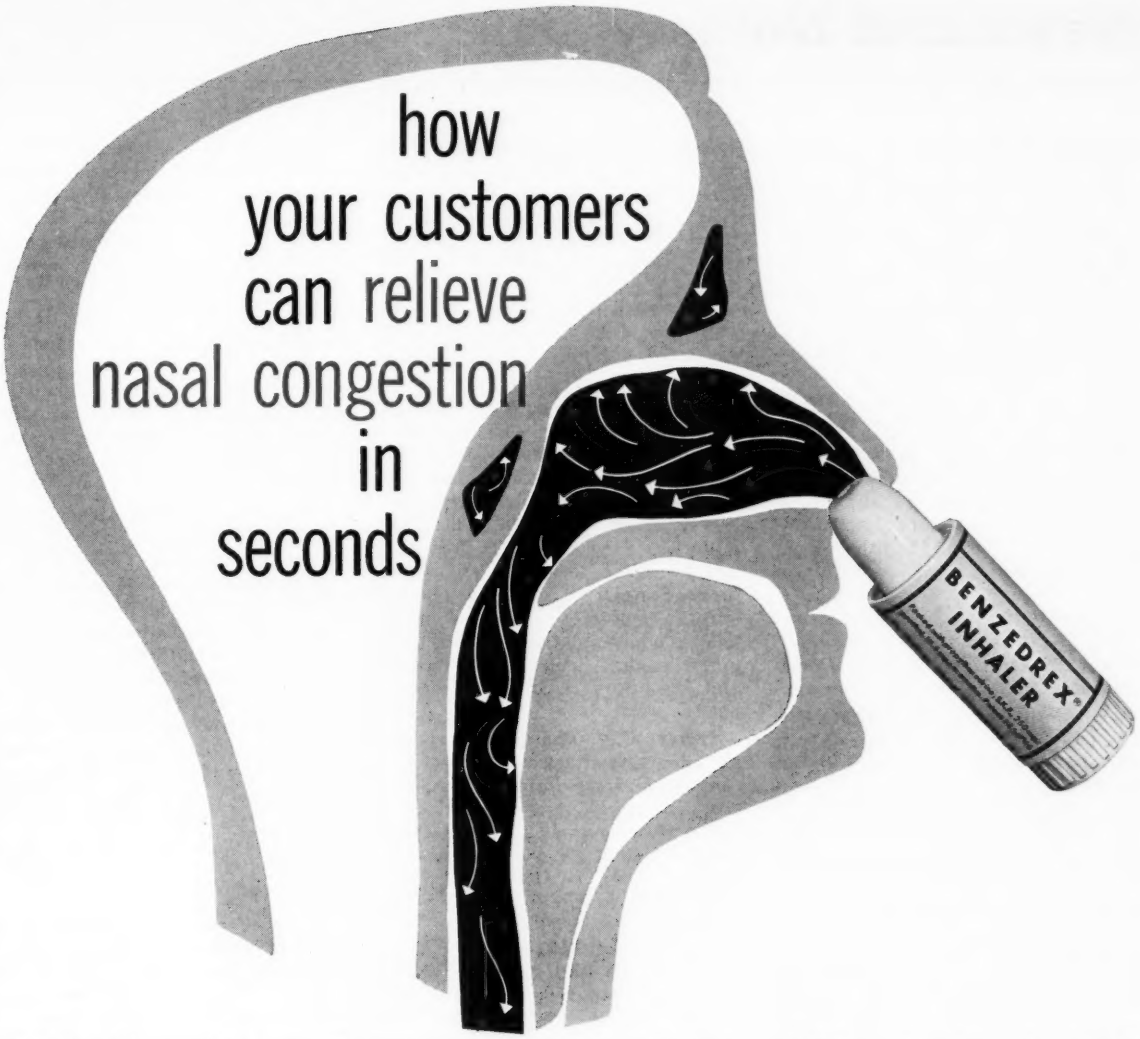
Psychiatrist William C. Menninger recommends that companies provide regular emotional checkups for their executives, to reveal how well they are able to get along with their associates and especially how they handle their hostile feelings.

Estimates of the number of leprosy cases throughout the world run as high as 10,000,000. Texas, Louisiana, California and New York lead the United States in number of reported cases. Texas is first with as many as 15 cases a year reported.

After weighing the value of mass X-ray programs against costs and radiation exposure, the Public Health Service, The Office of Education and the Children's Bureau have recommended that chest-X-ray programs be replaced with tuberculin skin tests in areas that experience a low incidence of cases.

A large delegation from the U.S. will attend the Brussels Meeting of the International Pharmaceutical Federation.

how your customers can relieve nasal congestion in seconds



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News and Notes

Associations

Animal Care Panel will hold its 9th annual meeting, December 3–6, at the Hamilton Hotel in Chicago. The organization, devoted entirely to the exchange of information on the care of laboratory animals, has scheduled a program of 31 reports by scientists engaged in medical and biological research on methods to improve conditions under which their experimental animals are housed, fed, and treated.

Delta Sigma Theta has begun issue of a paper, *Delta Sigma Theta News*, which will be dedicated to the forming of stronger bonds between the members of the public health team. Edited by *Philip Freedman*, with the assistance of *David Lee*, the paper's reporters include: *Anthony Yuskaitus*, *Bill Gilmartin*, *Richard Saulnier*, *Charles Scott*, *Paul Zakur*, *David Gorenberg*, and *Charles Susne*.

Idaho State Pharmaceutical Association, at its recent convention, formally endorsed a proposal for a school enabling medical students to take the first two years of their training in Idaho, after which they could transfer to an out-of-state medical school to complete their studies. Such a course, recommended to be established at Idaho State College in Pocatello, would provide greater opportunity for state students to start medical training, and would encourage more Idahoans to return to practice in their home state.

A Code of Ethics providing voluntary standards of practice, to be enforced by a Board of Arbitration appointed by Association officers, was adopted at the convention. This Code is believed to be the first put in practice by any State Pharmaceutical Association.

Indiana Pharmaceutical Association held its annual convention at French Lick, June 17–19. *Kenneth B. Lamont*, owner and manager of Lamont Drugs, South Bend, was elected President. Other new officers include: *Thurman Miller*, Terre Haute, 1st Vice President; *Charles Schreiber*, Tell City, 2nd Vice President; and *Daniel Purvis*, Fort Wayne, 3rd Vice President.

Institute for the Study of Analgesic and Sedative Drugs—Newly elected officers are: *Dr. Joseph M. White*, Warner-Lambert Research Institute, President and Chairman of the Board; *Dr. Raymond L. Conklin*, Miles Laboratories, Executive Vice President; and *Vincent J. Romeo*, Miles Laboratories, Secretary-Treasurer. The Institute sponsors studies of common analgesic and sedative drugs through grants made to clinical investigators and laboratory researchers throughout the world.

Jersey City Pharmaceutical Association—Newly elected officers are: *Anthony G. Mastrolia*, President; *Vincent G. Magaldi*, 1st Vice President; *Oscar W. Florenzie*, 2nd Vice President; *Ernest J. Monteleone*, Treasurer; *John J. Vena, Jr.*, Recording Secretary; and *Nunzi J. Zampella*, Corresponding Secretary.

The Association has established the Anthony J. DeRosa Memorial Award at the Rutgers College of Pharmacy in honor of a deceased member. The annual cash award will be given to the sophomore graduate who attains the best all-around average for the year.

National Association of Retail Druggists will hold its 60th annual convention in Philadelphia, September 28 through October 2, with the Philadelphia Association of Retail Druggists acting as host. PARD Past President *I. M. Ostrum* is General Chairman of the convention committee and will be assisted in planning by *Carl K. Raiser*, Smith Kline & French Director of Distribution, and *Hyman C. Bogash*, PARD Secretary. Both NARD and PARD will be celebrating their 60th anniversaries.

National Wholesale Druggists' Association—*Roy V. Schwab*, President of the Brunswig Drug Company, Los Angeles, has succeeded the late *Richard L. Hanson* as NWDA President. Mr. Hanson died of a heart attack July 6 in New York.

New Jersey Pharmaceutical Association's President-Elect is *Edward C. White* of Hoboken, owner of one of the state's oldest pharmacies. Mr. White assumed this position on June 19 at the Association's annual convention in Atlantic City, at the same time that *Frank Pinchak* of Paterson took office as President.

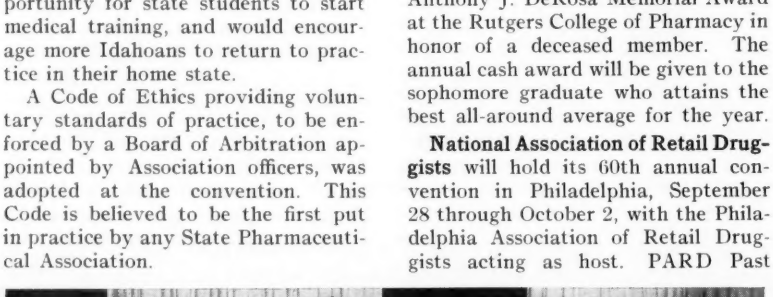
Meyer Israel, owner of Cianciulli's Pharmacy, Bayonne, was recently elected President of the State Board of Pharmacy. A graduate of Rutgers College of Pharmacy, Mr. Israel has been active in civic, as well as professional, affairs. He is a member of APhA and NARD.

New York State Pharmaceutical Society—*Raymond L. Klebes*, of Bolton Landing, was elected Society President on June 20 at the 80th annual convention at Kiamesha Lake.

Speaking at the convention, *Senator Hubert Humphrey* of Minnesota said, "We cannot expect to live peacefully in a world slum overflowing with disease, tension, and hate. Therefore, we must share the blessings of our fantastically expanding medical and pharmaceutical research with the more than two-thirds of the world that is sick."

Parenteral Drug Association will hold its annual convention at the Hotel Statler, New York City, October 22–24. The meeting will include the presentation of papers pertaining to parenteral drug manufacture and marketing, as well as medical aspects of injectibles. Program arrangements are being made by *Dr. Harold Blumberg* under the guidance of Association President, *William S. Bucke*.

Rho Pi Phi International Leukemia Foundation—*Frieda S. Snider* of Rochester, N.Y., was elected Foundation President at the annual convention held June 29 to July 3 in Kiamesha Lake, N.Y. Other officers are: *Reba*



Virginia Pharmaceutical Association *Officers and Council Members were installed on June 18 at the 77th Annual Convention of the Association. They are, seated (l to r), R. R. Rooke, Richmond, Treasurer; Glenn B. Updike, Danville, President; J. W. Chamblee, Richmond, Immediate Past President; and J. Curtis Nottingham, Williamsburg, Secretary; and standing (l to r), Council Members, Marrion Lee Baker, Gate City; C. L. Clodfelter, Hampton; Abraham Cohen, Richmond; J. Leonard Beck, Roanoke; Thomas H. Holland, Danville; Roy P. Rhodes, Lynchburg; Donald W. Smith, Alexandria; and W. L. Hickok, Waynesboro. Not present are Council Members, H. M. Gaunt, Winchester; George C. White, Norfolk; and Victor T. Clark, 1st Vice President, Portsmouth.*

Weiss of Philadelphia, Vice President; *Abraham Smalline* of Rochester, Treasurer; *David Snider* of Rochester, Secretary; and *Gertrude K. Weiner* of Boston, Legal Advisor.

Science News Institute has been formed to provide medical and scientific testing and public relations services to manufacturers of ethical and proprietary drugs and pharmaceutical, chemical, and nutritional products. Located at 527 Madison Avenue, New York, the Institute has branches in Washington, Philadelphia, and Newark, N.J.

Comprising a group of communications specialists and leading medical consultants, the new service will provide information concerning products to medical and trade journals and the consumer and business press. In addition, the Institute will interpret the therapeutic effects of laboratory and commercial products and arrange scientific symposia for the presentation of findings on such products.

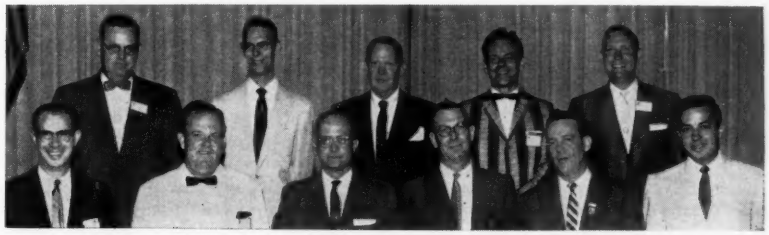
Symposium on Antibiotics—The 6th annual Symposium will be held in Washington, D.C., October 15–17. Sponsored by the journals *Antibiotics & Chemotherapy* and *Antibiotic Medicine & Clinical Therapy*, the meeting will include panel discussions on causation, prevention, and control of staphylococcal diseases in hospitals and on the effectiveness of certain antibiotics in treating staphylococcal disease. Chairman of the Symposium is *Dr. Henry Welch*.

Colleges

Creighton University—*Dr. Salvatore J. Greco* became Dean of the School of Pharmacy on July 1, succeeding the late *Dean William A. Jarrett* who died January 26.

Fordham University—*Dr. Paul V. Buday*, Assistant Professor of Pharmacology, is the recipient of a 1958–59 Gustavus A. Pfeiffer Memorial Research Fellowship, which will enable him to investigate contributions to the pharmacology of Serotonin, Acetylcholine, and Adenesine Triphosphate.

Rutgers University—Programs leading to Doctor of Philosophy degrees in Pharmacy and Pharmaceutical Chemistry will be offered by the College of Pharmacy for the first time this fall. *Dean Roy A. Bowers* said the new policy has been chosen in response to increasing demands by industry for research personnel with doctoral qualifications and to the growing need for Pharmacy educators. A similar program leading to a Doctor of Philosophy degree in Pharmacology is being inaugurated at the University of Pittsburgh.



Indiana Pharmaceutical Association *Travelers' Auxiliary officers for 1958–59 are: front row (l to r), J. E. Robertson, Secretary; Allen Mills, Executive Committee Member; R. S. Stevens, 3rd Vice President; Ray Kennedy, President; R. T. McGinty, Executive Committee Member; and John Hoffman, Executive Committee Member; back row (l to r), Roscoe Deaton, Executive Committee Chairman; Howard Fry, Executive Committee Member; H. W. Prewitt, 2nd Vice President; George Mueller, Executive Committee Member; and Tom Yates, 1st Vice President. Absent from the picture is C. H. White, 4th Vice President. All the Officers are from Indianapolis.*

Smith Kline & French Foundation of Philadelphia has contributed a $6,000 grant to Rutgers to provide a 2-year SK&F Foundation Fellowship for a candidate in the new doctoral program.

University of Arizona—*Dean Willis R. Brewer* of the College of Pharmacy is participating with other faculty members in a search for curative plants throughout the west of Mexico. Sponsored by the New Crops Research Branch, Agricultural Research Service of the U.S. Agriculture Department, the trip is financed by a federal grant set aside to ascertain the economic value of plants. Cooperating with the University of Arizona are the Pharmacognosy Divisions of the Pharmacy Schools of the College of the Pacific, the University of Utah, and the University of Washington, all of which have requested the explorers to collect specific types of plants with possible medicinal value.

University of Wisconsin—The School of Pharmacy and Extension Services has begun issue of a monthly *Bulletin* which will contain a calendar of events at the University and throughout the state and will present portfolios of ideas on specific topics in the area of Pharmacy.

Government

Health, Education, and Welfare—*Dr. Arthur Sherwood Flemming* has succeeded *Marion Folsom* as HEW Secretary. A graduate of Ohio Wesleyan University in 1941, Dr. Flemming holds degrees from American and George Washington Universities, in addition to honorary degrees from a number of institutions. He has been a teacher and a journalist, and since 1948 he has held the post of

Continued on page 458

REAL PROTECTION

That is what you have when you insure with A D I

THE DRUGGISTS' OWN
Service Security Savings
THE AMERICAN DRUGGISTS' INSURANCE CO.
American Building CINCINNATI, OHIO
INSURANCE CO.

CONSULT OUR AGENT

 Continued from page 457

President at Ohio Wesleyan University. His Government affiliation began in 1939 when he became a member of the U.S. Civil Service Commission. Since then he has held numerous high positions in the Government.

On July 21, *President Eisenhower* nominated *Bertha Adkins* as Undersecretary of HEW. A former college dean, Miss Adkins has been Vice Chairman of the Republican National Committee since 1953.

Public Health Service—Surgeon General, *Dr. Leroy E. Burney*, has announced that a conference on staphylococcal disease will be held at the PHS Communicable Disease Center in Atlanta, Ga., September 15–17. The main purpose of the conference, which was recommended by the American Hospital Association, is to identify control measures which can be established in hospitals and communities to deal with the mounting problem of infections caused by bacteria which are resistant to penicillin and other antibiotic drugs.

Dr. Jack C. Haldeman has been appointed Chief of the PHS Division of Hospital and Medical Facilities, succeeding *Dr. Vane M. Hoge*.

Construction of a field health center and six staff housing units at Chinle, Arizona, will soon begin under PHS contract. The center will bring modern health and medical services to approximately 10,500 Indians living on a Navajo Reservation in the area.

Dr. William H. Stewart succeeds retiring *George St. J. Perrott* as Chief of the PHS Division of Public Health Methods. Dr. Stewart was formerly Associate Director of the National Heart Institute.

Veterans Administration—*Dr. Ivan F. Bennett*, Chief of Psychiatric Research for the VA, has accepted a position with Eli Lilly and Company where he will be a member of the firm's Clinical Research Division, heading research in psychiatry. He will also teach at the University of Indiana School of Medicine and will be a research consultant for Indiana's Division of Mental Health. He is the author of a series of articles on Tranquilizers which appeared in THIS JOURNAL in 1957.

Fifty-six VA hospitals and clinics will participate in a National Institutes of Health study of the neurological disease, amyotrophic lateral sclerosis, commonly known as Lou Gehrig's disease, or ALS. *Dr. Thomas L. Auth*, Chief of the VA Neurology Division, said neither cause nor cure for the disease is known.

Dr. George E. Armstrong of New York was recently elected Chairman of the VA Special Medical Advisory Group, with *Dr. Howard P. Rome* of Rochester as Vice Chairman.

Dr. Edward Dunner has been appointed Chief of the Clinical Studies Division of the VA, having formerly been Secretary of the VA-Armed Forces' cooperative study of the chemotherapy of tuberculosis and VA Chief of tuberculosis research.

Pfizer *scientists attended a seminar on June 15 featuring discussion by Dr. Ashly Miles (l), Director of the Lister Institute in London and world authority on non-specific immunity. Pictured with him is Dr. J. F. Snell, Pfizer research radiobiologist and specialist in the reticulo-endothelial system.*

Industry

Abbott Laboratories—Chairman of the Board of Directors, *Dr. Ernest H. Volwiler*, has been appointed by *President Eisenhower* to the 24-member Board of the National Science Foundation. He will serve in this capacity for 6 years with another Abbott Director, *Dr. Roger Adams*, who was appointed in 1954.

Ground was broken recently for a Research Center addition which will more than double the space available to Abbott for pharmaceutical research, development, and control.

Alcon Laboratories broke ground on June 14 for the first unit of its projected $1,000,000 plant in South Fort Worth, Tex. The buildings will include research laboratories and general offices in addition to manufacturing and shipping facilities. The firm was established in 1944 by *W. C. Conner* and *R. D. Alexander* as a prescription laboratory. Not until 1947 was a decision made to specialize in the production of nasal preparations and sterile eye drops. Alcon has since undergone considerable expansion, as evidenced in part by the present building activity. Mr. Conner is now the company's President; Mr. Alexander is Vice President and Director of Sales.

Armour Pharmaceutical Company, formerly known as Armour Laboratories, division of Armour and Company, will have as its new President *Robert A. Hardt* who is now Executive Vice President of Hoffmann-La-Roche. Mr. Hardt will assume his Armour position on September 1.

Bulman Corporation—*Leonard St. John*, Vice President for Marketing and Sales, has been named President of the newly formed Bulman Corporation of California which will service Washington, Oregon, Nevada, and Arizona, as well as California, from its Los Angeles headquarters. Mr. St. John says that the tremendous emphasis on self-selection and self-service has created an entirely new pattern in store planning and store fixturing, and that the California market is of the greatest importance in this respect.

Mead Johnson was host on July 14 to a dozen French-speaking pharmaceutical leaders from the Province of Quebec, who came to Evansville to tour the firm's plant and laboratories and to meet with top-level executives of the Company. Among the guests were *Jean G. Richard*, President of the Canadian Pharmaceutical Association, and *George B. Dionne*, President of Mead Johnson du Quebec. *Dr. Robert P. Fischelis*, APhA Executive Secretary and General Manager, and honorary member of the Canadian Association, was also present.

Dr. James W. McNeil has been promoted to Medical Director of the Nutritional and Pharmaceutical Division, succeeding *Dr. M. J. Sweeney* who has joined the teaching staff of the University of Tennessee School of Medicine as Assistant Professor.

Wm. S. Merrell Company—*Dr. Frederick J. Pilgrim* joined the staff on August 1 as Associate Director of Research in charge of Chemical Sciences, in which position he will head up all organic and pharmaceutical chemistry research departments. Dr. Pilgrim was previously Manager of the Chas. Pfizer Research Laboratories at Groton, Conn.

Robert C. Gaines has been promoted to the post of Director of Sales Training. He has been with Merrell for 14 years.

Organon—*Joseph Palmaccio* has become Chief of the Sterile Products Division. A graduate of St. John's University, Mr. Palmaccio holds a

Continued on page 460

BIG NEWS IN THE TETRACYCLINE FIELD!

For the first time... a practical intramuscular dosage form producing significant 24-HOUR BLOOD LEVELS with a SINGLE INJECTION

Tetrex®

TETRACYCLINE PHOSPHATE COMPLEX U.S. PAT. NO. 2,791,609

INTRAMUSCULAR '250'

WITH XYLOCAINE

Thanks to the unique solubility properties of TETREX – the original tetracycline phosphate complex which produces faster, higher, more prolonged blood levels – maximal dosage can now be incorporated in minimal injection volume. RESULT: *a single intramuscular injection can provide significant tetracycline blood levels for 24 hours.*

TETREX Intramuscular '250' – in keeping with its tremendous potential—is being intensively promoted right now to the medical profession. The need is self-evident; the product is unique. So be prepared for a faster, higher, more prolonged prescription demand.

Make sure – right now – that your stock is adequate for all requirements

Each vial (to be reconstituted with 1.6 cc. of sterile water or normal saline) contains:

TETREX (tetracycline phosphate complex) .....**250 mg.**
(tetracycline HCl activity)

Xylocaine* hydrochloride ..... **40 mg.**

plus magnesium chloride 46 mg. and ascorbic acid 300 mg. as buffering agents.

*® of Astra Pharm. Prod. Inc. for lidocaine.

BRISTOL LABORATORIES INC., SYRACUSE, N. Y.

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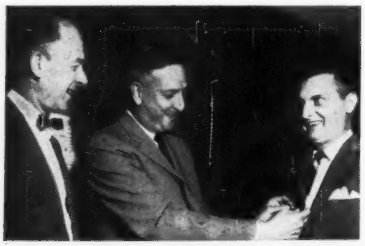


A. H. Robins Company *Executives, G. Mallory Freeman (l), Advertising Director, and Grayson Kirtland (r), Insurance Manager, receive from E. Claiborne Robins, President, gold tie clasps in recognition of their tenth year with the firm.*

Master of Science Degree from Georgetown University and was employed by E. R. Squibb and Sons prior to his joining Organon.

Parke, Davis' History of Pharmacy and History of Medicine series of paintings, edited by newly-appointed Director of Institutional Advertising, *George A. Bender,* both won top honors in the 1958 Lithographic Awards sponsored by the Lithographers National Association.

Dr. Elwood A. Sharp, Medical Assistant to the President, has been elected an affiliate of The Royal Society of Medicine in London.

George Donat has been appointed to the newly-created position of Director of Overseas Marketing Services. A native of Vienna, Austria, Mr. Donat joined the firm in 1953.

Dr. Richard Nowotny has been named Manager of the company's new Munich Branch, with *Hans U. Bodenmann* as Munich Sales Manager. A native of Vienna, Dr. Nowotny joined Parke, Davis in 1950. Mr. Bodenmann entered the firm in 1949 as Field Manager in his native Switzerland.

Pfizer has launched a Biologicals Research Program under the direction of *Dr. Joel Warren,* formerly a member of the Division of Biologics Standards, National Institutes of Health. Dr. Warren will supervise a program of basic and applied studies at Pfizer's recently established Biologics Center near Terre Haute, Ind. Working with him as Head of Pfizer's Respiratory Virus Research Section is *Dr. Keith E. Jensen,* who served previously with the U.S. Public Health Service's Communicable Disease Center at Montgomery, Ala., as Chief of the Respiratory Disease Unit.

Purdue Frederick—*Dr. S. J. London* has been appointed Medical Director, in which capacity he will supervise pharmacological research and development of new drugs in the firm's laboratories. New Associate Medical Director is *Dr. H. S. Tirsch. Seymour A. Lubman* has been elected Vice President in Charge of Sales. Formerly Director of Sales, Mr. Lubman will be assisted by *Murray Altman,* Director of Sales Training, and *Marvin Weinberg,* Assistant to the Vice President.

Roche Laboratories—*Dr. V. D. Mattia, Jr.,* has been named General Manager to succeed *Robert A. Hardt (see above).* Dr. Mattia will assume his new duties immediately, with Mr. Hardt serving in a consulting capacity until September. Dr. Mattia joined Roche in 1957 as Director of Medical Information. In January 1958, he was named Director of Medical Research.

Schering Corporation Vice President *Herman W. Leitzow* has been appointed to the Rutgers College of Pharmacy Advisory Committee for a 5-year term. Mr. Leitzow, a U. of Minnesota graduate, was also recently elected Secretary of the Sales Executives Club of New York, an organization of which he has been a Director and constantly active member.

Dr. John N. McDonnell, Schering Vice President, has been elected to the Board of Directors of the New Jersey Association for Mental Health.

Paul J. Micali, formerly Assistant Advertising Manager in charge of Domestic Ethical Promotion, has been named Director of Advertising, while former Advertising Manager *Ralph C. Najarian* has assumed the position of Planning Advisor in the Advertising Department.

Head Librarian, *Mrs. Rita Goodemote,* has been elected Secretary of the Pharmaceutical Section of the Special Libraries Association.

Schering's series of regional maps entitled "Medical America" is being made available to pharmacies in the form of window displays. The 14 pictorial maps cover the sweep of American medical history.

Smith Kline & French announced a major expansion of its closed-circuit medical color television services in the U.S. and abroad. Since the first color TV program in June, 1949, S K & F has covered more than 850 operations and well over 1,500 clinics.

Francis Boyer, Chairman of the Board, has been elected to a 6-year term on the Harvard University Board of Overseers.

Upjohn Company has announced plans for a major expansion of its physical facilities in the next 2 or 3 years to meet the growing demand for its products. The program will include construction of a new office and manufacturing building in Mexico City and in Australia, expansion of the Canadian plant and construction of several buildings in this country.

Dr. Lester J. Coleman, a biochemist, has been appointed to head the newly organized Products Development Section of Upjohn International Operations, Inc., which is the management and service organization of The Upjohn Company's foreign subsidiary corporations.

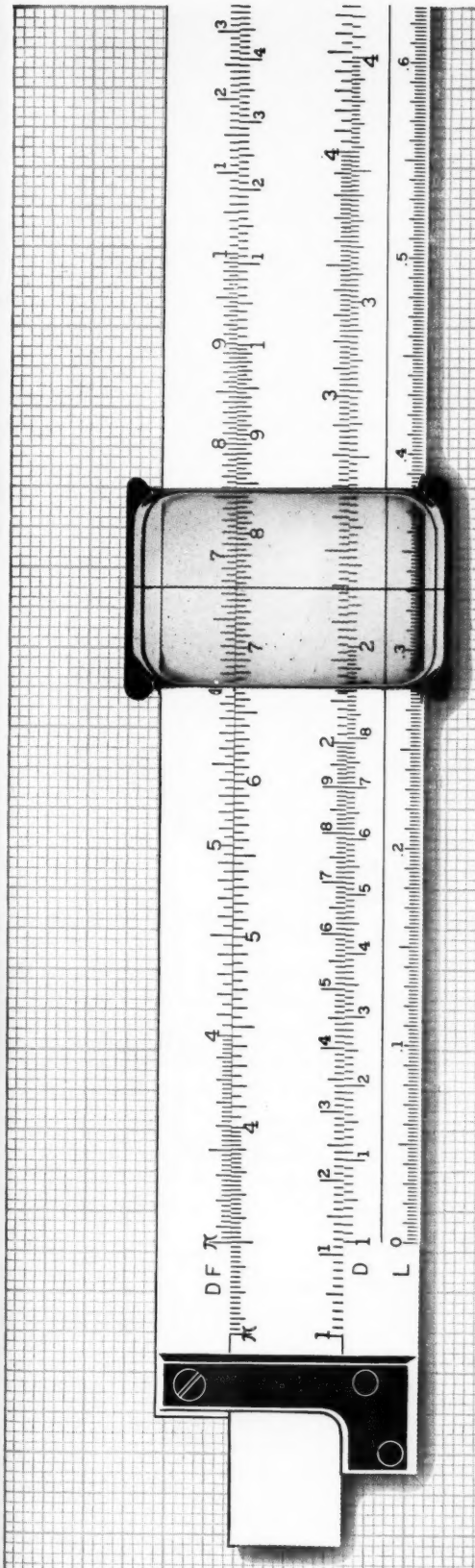
International

Haiti has contributed $5000 to the Special Malaria Fund of the Pan American Sanitary Bureau. The Fund is being used exclusively to finance the continent-wide malaria eradication campaign in the Americas, undertaken in compliance with a resolution of the XIV Pan American Sanitary Conference held at Santiago, Chile in 1954. All the countries and territories of the Americas that have malarious areas now have under way eradication programs which will rid the hemisphere of a disease that causes severe economic losses as well as serious loss of life.

Bristol Laboratories' *President Philip I. Bowman (c) and Dr. Amel R. Menotti (r) greet Dr. Hamao Umezawa (l) of Tokyo University, discoverer of the antibiotic Kanamycin, on his arrival at New York International Airport to attend, with other Japanese scientists, a conference on Kanamycin, held July 10 and 11 at the New York Aacademy of Sciences. Bristol Laboratories developed and tested the drug.*

Japan—*Dr. Takeo Ueda,* Professor of Pharmaceutical Chemistry at the Keio-Gijuku University School of Medicine, visited APhA headquarters in Washington, D.C. on June 9.

Venezuela—*Dr. Carlos Luis Gonzalez,* Minister of Health of Venezuela, has been appointed Assistant Director of the Pan American Sanitary Bureau. Dr. Gonzalez holds a Doctorate in Public Health from Johns Hopkins University and served as Director General of Health of Venezuela from 1949 to 1953.



Announcing

PRONOUNCED TAY-O

Tao*

(brand of triacetyloleandomycin with glucosamine)

Capsules / Oral Suspension

a new antibiotic derivative *designed for superior control* of common infections

There are two reasons why TAO will soon be one of your profit leaders.

1 TAO offers the physician now using the penicillins or erythromycin these telling advantages:

Control of the common infections, but minimal interference with normal G.I. flora

The spectrum of erythromycin, plus faster and greater absorption and effectiveness against organisms (notably staphylococci) resistant to erythromycin

Greater range of efficacy than the penicillins, without penicillin resistance or its sensitivity reactions

2 TAO is being backed by the most intensive promotion in ROERIG'S history. Order now from your usual source of supply.

Supplied: TAO Capsules—250 mg. and 125 mg., bottles of 60. TAO for Oral Suspension—1.5 Gm.; 125 mg. per teaspoonful (5 cc.) when reconstituted; unusually palatable cherry flavor; 2 oz. bottle.

J. B. Roerig and Company
Division, Chas. Pfizer & Co., Inc.
New York 17, N. Y.

*TRADEMARK

Take 16 SECONDS *to make this convincing test**

Use INCERT®

to add medication to I.V. solutions, and time the operation from start to finish. You'll find it will take just 16 SECONDS to complete the admixture . . . ready for use!

INCERT eliminates ampules, needles, syringes and all the preparation time required with the old way of "needling" solutions. Simply plug the **INCERT** vial into the large hole in the stopper of the I.V. bottle – and the job is done.

INCERT provides a sterile, safe, single-step "closed system" method of adding a variety of medications to solutions. The **INCERT** vial, left in position in the solution bottle, identifies the medication until ready for use.

Here is a real economy in lighter work-load and reduced preparation costs . . . ready for instant use in your hospital.

Sample* **INCERT *vials available for your convenience.*

NOW AVAILABLE IN INCERT®

VI-CERT C1000 with B_{12} (Lyophilized B Vitamins with Vitamin C and B_{12}).
INCERT T41—Thiamine HCl 25 mg., Riboflavin 10 mg., Niacinamide 100 mg., Sodium Pantothenate 20 mg., Pyridoxine HCl 20 mg., Ascorbic Acid 500 mg.
INCERT T42—Same as above, with 1000 mg. Ascorbic Acid and Cyanocobalamin (B_{12}) 25 mcg.
VI-CERT® (Lyophilized B Vitamins with Vitamin C).
INCERT T16—500 mg. lyophilized succinylcholine chloride.
INCERT T17—1000 mg. lyophilized succinylcholine chloride.

SUCCINYLCHOLINE CHLORIDE

SUX-CERT (Lyophilized succinylcholine chloride for skeletal muscle relaxation).
INCERT T110—500 mg. in 5 cc. sterile solution.
INCERT T140—1000 mg. chloride in 10 cc. sterile solution.

POTASSIUM CHLORIDE SOLUTION

INCERT T2010—20 mEq K+ and Cl– in 10 cc. sterile solution (2 mEq/cc.).
INCERT T2030—30 mEq K+ and Cl– in 12.5 cc. sterile solution (2.2 mEq/cc.).
INCERT T2020—40 mEq K+ and Cl– in 12.5 cc. sterile solution (3.2 mEq/cc.).

POTASSIUM PHOSPHATE SOLUTION

INCERT T31—(1.579 gm. K_2HPO_4 and 1.639 gm. KH_2PO_4 per 10 cc.). Contains 30 mEq K+ and HPO_4= in 10 cc. sterile solution.

CALCIUM LEVULINATE SOLUTION

INCERT T51—10% solution, 1.0 gm. (6.5 mEq of Calcium) in 10 cc. sterile solution.

TRAVENOL LABORATORIES, INC.

Morton Grove, Illinois

pharmaceutical products division of
BAXTER LABORATORIES, INC.

Branch News

Local Branches

Memphis Branch—A dinner to honor senior students of the University of Tennessee School of Pharmacy who participated in this Branch's essay contest on Pharmacy was given at the close of the school term at the University Center. The winner, *Betty Knipp*, received award of a silver key and a 3-year membership in the APhA. Other participating students present were: *James Copeland, Mary Duncan, Phil Favaro, Gary Francis, William Meddin* and *Nancy Pierce.*

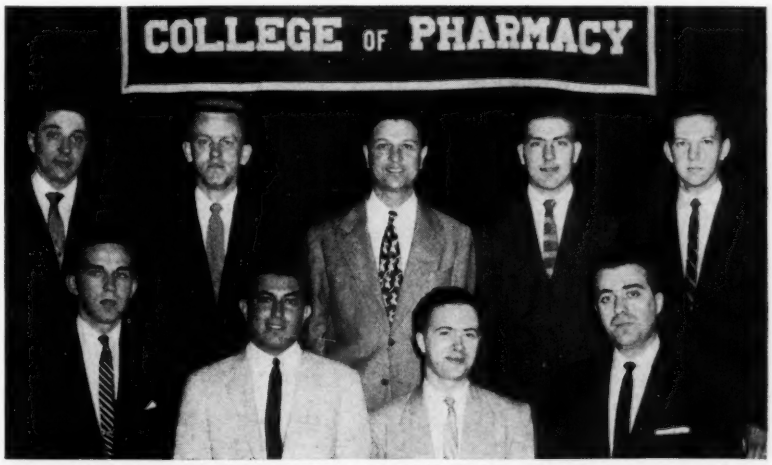
Northern New Jersey Branch—Recent officer elections for 1958–59 have made *Emil P. Martini, Jr.*, Hackensack, chief executive; *Goodsell F. Waters*, Jersey City, 1st Vice President; *Paul Pumpian*, New Brunswick, 2nd vice President; *Michael Iannarone*, Associate Professor, Biological Sciences of Rutgers University College of Pharmacy, Newark, Secretary-Treasurer; and *Dr. John L. Voigt*, Director, New Jersey State University Pharmaceutical Extension Service, Program Chairman.

Student Branches

College of The Pacific—Scholarship awards totaling $4,730, sponsored by the local branch of the APhA, have been given to the following students of the College of Pharmacy: California Pharmaceutical Association, $500, to *Gerald White* of Salina; CPA Women's Auxiliary, $300, to *Larry Schalo* of Lodi; Sacramento County Pharmaceutical Association Women's Auxiliary, $300, to *Philip Sanders* of Stockton; State of California Merit Scholarships, $600 each to *Ellen Lawseth* of Stockton, *George Silva* of Los Banos, *George MacMurphey* of Rio Linda, *Thomas Cortlant* of Vallejo, and *Warner Striplin* of Ceres; The Coffin-Reggington Co. Award, $300, to *Arthur Weybright*, of Santa Cruz; Los Angeles Drug Co., $250, to *Robert Bolling*, of Long Beach; the Drug Service Co. Fund of Fresno, $80 to *Anton Musselman*, of Stockton.

The Bear Photo Co. Plaque went to *Richard Brown*, of Stockton. The Faculty Men's Award went to *Leonard Terra*, of Sacramento. The Faculty Women's Award went to *Carole Nelson*, of Lodi. The Jean and Earl Wong Award was given to *Wallace Beaver*, of Stockton. *George MacMurphey* and *Warner Striplin* tied for the John Crosetti Award.

These awards were all presented at a meeting at close of the school year presided over by *Kenneth Zentner*, President of the Student Branch. The closing social event of the year was a picnic and steak-barbecue.



ST. JOHN'S UNIVERSITY COLLEGE OF PHARMACY students hold their annual forum, "Youth Looks at Pharmacy." Speakers, 1st row (l to r): Anthony Kuhlman, Serafino Giordano, Robert Tillander, Stanley Aaron; 2nd row: Murray Stollwerk, Edward Patak, Professor I. H. Bellafiore, Program Director and Faculty Advisor, Michael Kopcho, and Richard Diehl.

Ferris Institute—1958–59 officers elected are *Richard D. Bashore*, President; *Carolyn Ensign*, Vice President; *Marian J. Stroh*, Secretary; and *William Spencer*, Treasurer.

Florida A & M University—1958–59 officers elected are *Luther A. Donaldson*, President; *Wilfred A. Gibson*, Vice President; *Otis J. Williams*, Secretary; *Monroe Monford, Jr.*, Treasurer; *James R. Gibbons*, Reporter; and *Carlton Humphries*, Chaplain.

Fordham University—1958–59 officers elected are *Stuart B. Cullen*, President; *Samuel A. Paul, Jr.*, Vice President; *Rose Linda Serrago*, Secretary; and *Matthew J. DiGiorgi*, Treasurer.

George Washington University—1958–59 officers will be *Charles H. Jacot*, President; *James I. Carver, II*, Vice President; *Harvey B. Press*, Secretary; and *Joseph T. Sanders*, Treasurer.

Howard College—Officers elected for 1958–59 are *Marlan L. Fowler*, President; *Thomas D. Brodie*, Vice President; *Mary Elsie Stripling*, Secretary; *William G. Skinner*, Treasurer; *Edward Baxter Fortenberry*, Historian; *Victoria Love*, Chaplain.

Idaho State College—Officers for 1958–59 are *Marvin L. Vitt*, President; *Carole Machek*, Vice President; *Richard D. Mortensen*, Corresponding Secretary; *Donald J. Novatny*, Recording Secretary; and *Austin J. Galy*, Treasurer.

Massachusetts College of Pharmacy—Officers elected for 1958–59 are *Frank L. Pallaria*, President; *Bart N. Quirinale*, Vice President; *Elaine I. Dargie*, Secretary; *Edwin F. Koscielniak*, Treasurer; and *Richard G. Spinney*, Program Chairman.

Medical College of South Carolina—1958–59 officers will be *Frances E. Thomas*, President; *Donald E. Martin*, Vice President; *Robert H. Mathewes*, Secretary; and *David A. Owings*, Treasurer.

Montana State University—At the Awards dinner given at close of the school year, *Louis J. Fischl*, President of the APhA, was featured speaker. A highlight of his address was describing his experience as the first and only Class of 1914 graduate receiving his Ph.C. degree from Montana State University School of Pharmacy.

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Branch News Continued from page 463

1958 awards were made to the following students: Bristol Award—*Gerald Baunig;* Lehn & Fink Gold Medal—*Eugene Fitzpatrick;* Merck Awards—*Virginia Wyman* and *Cal Ness;* Rexall Trophy—*John Stelling.*

American Foundation for Pharmaceutical Education scholarships of $125 each—*Claudia Hooper, Edward Harrington,* and *Gary Wold.*

Davis Brothers Scholarships of $87.50 each—*Robert Werle* and *DeWayne McAlear.*

Student officers elected for 1958–59 are *Edward J. Harrington,* President; *James E. Boyce,* Vice President; *Georgia Mae Hurd,* Secretary; and *Stanley W. Tiffany,* Treasurer.

North Dakota State College—1958–59 officers will be *Elroy Wagner,* President; *Freeman M. J. Mjolsness,* Vice President; *Judy Ozbun,* Secretary; and *Dee Ann M. Nelson,* Treasurer.

Northeast Louisiana State—1958–59 officers will be *Lynn M. Meredith,* President; *Jack R. McCormack,* Vice President; *Edward H. Leatherman,* Secretary; *John Randolph Cage,* Treasurer; and *Dr. Cecil P. Headlee,* Faculty Advisor.

Ohio State University—1958–59 officers will be *Stephen S. Deedrick,* President; *Raymond M. Blasiak,* Vice President; *Nancy Ellen Scott,* Secretary; *Wesley C. Uhl,* Treasurer; *Rinaldo A. Brusadin,* Membership Chairman; *John K. Marshall,* Editor of *Spur. Alan Grimes* of Morral, student of the College of Pharmacy, tied for the Don Discher Memorial Plaque, which goes to the Phi Delta Chi senior with the highest cumulative point-hour ratio. This award was presented at the annual Pharmacy recognition dinner sponsored by this student branch. Presentation of this and other annual awards was made by *Dr. Lloyd M. Parks,* Dean of the College of Pharmacy.

Oregon State College—*Dr. Rob S. McCutcheon* has been elected Faculty Adviser at the School of Pharmacy APhA Student Branch, replacing *Herman C. Forslund.*

Officers elected for 1958–59 are *Ivan A. Burton,* President; *Walter K. Stoeffler,* Vice President; *Nancy K. Hammers,* Secretary; and *Robert L. Sheldon,* Treasurer.

Rutgers University—1958–59 officers will be *Allen K. Herd, III,* President; *Joseph N. Gallina,* Vice President; *William A. Gilmartin,* Secretary; and *Ernest G. Castelli,* Treasurer.

St. Louis College of Pharmacy—1958–59 officers elected are: *Samuel Blakeley, Jr.,* President; *Gerald L. Maurer,* Vice President; *Joanne M. O'Brien,* Secretary; and *Roger L. Schnaare,* Treasurer.

State College of Washington—1958–59 officers will be *Thomas E. Garred,* President; *Ronald B. Boscow,* Vice President; *Claudia D. Perring,* Secretary; and *Charles F. Martin,* who recently returned from sabbatical leave, resumes office of Faculty Adviser and will also serve as Treasurer.

University of Buffalo—*Dr. Daniel H. Murray,* who has served as Acting Dean for the past 4 years, has been named Dean of the School of Pharmacy of this University. Dean Murray has a fine record of popularity among his students for his untiring work as counsellor and of promoting Pharmacy as a profession. *Drs. Gerhard Levy* and *Kenneth Ballard* have joined his staff as instructors, both coming from the University of California College of Pharmacy.

Dean D. H. Murray

University of Cincinnati—At their last meeting of the season, members elected officers and viewed "Taming the Crippler," a movie based on Dr. Salk's fight to conquer polio. Officers for 1958–59 will be *Jack C. Pickett,* President; *Dorothea Rohman,* Vice President; and *Joseph J. Palermo,* Secretary-Treasurer.

University of Georgia—1958–59 officers elected for this branch are *Clinton Wade Hodges,* President; *Luther L. Denton, Jr.,* Vice President; *Evelyn V. Dekle,* Secretary; *Mrs. Olive Clarice Raburn,* Recording Secretary; *J. Ronald Jowers,* Treasurer; and *Zenious Harkleroad,* Parliamentarian. *Dr. K. L. Waters,* Dean of the Pharmacy School, spoke on the APhA Los Angeles Convention at the final meeting of the season.

University of Kansas—1958–59 officers elected are *Louis D. Bruno,* President; *Robert L. Dall,* Vice President; *Trudie Ann Foltz,* Secretary; and *Harold L. Earnest,* Treasurer. *Mrs. Clara Miller* addressed the final session on goals of the Kansas Pharmaceutical Association, of which she is Secretary.

University of Maryland—Officers for 1958–59 will be *Stanley L. Becker,* President; *William B. Gray,* Vice President; *Eugenia W. Marshall,* Secretary.

University of Michigan—*Dr. John Autian,* Assistant Professor of Pharmacy at the University of Michigan College of Pharmacy, will serve as Faculty Adviser of this Student Branch for 1958–59. *Dr. Autian* replaces *Dr. Alex Berman,* who will spend the coming year in intensive study of hospital pharmacy in France.

University of Minnesota—At their 3 final meetings of the year, members heard *Robert Buchanan,* General Manager of the Northwestern Drug Company, talk on "Wholesale Pharmacy"; viewed a movie entitled "The Art of Tablet Coating," presented by Ciba Pharmaceutical Products, Inc.; and elected 1958–59 officers. These are *Berkeley Alexander,* President; *Lawrence G. Johnston,* Vice President; *Diane E. Erickson,* Secretary; and *Richard D. Carlson,* Treasurer.

University of Nebraska—Officers for 1958–59 are *James J. Hamick,* President; *Howard R. Holmquist,* Vice President; *Vija Uptitis,* Secretary; and *Jerry Lee Sheets,* Treasurer.

University of North Carolina—Gifts from pharmaceutical manufacturers were presented at the year's last session to outstanding graduating students by retiring President *James Inabinet.* 1958–59 officers elected are *William W. Moose,* President; *Jimmy R. Haithcock,* Vice President; *Sue Ballantine,* Secretary; *Gordon L. O'Briant, Jr.,* Treasurer; *Russell G. Mitchell,* Assistant to the President; and *William Dunn,* Executive Committee Member.

University of Tennessee—1958–59 officers elected are *Paul E. Branch,* President; *Donald L. Tennyson,* Vice President; *Sarah Jane Miller,* Secretary; and *Billy R. Wilkerson,* Treasurer.

University of Wyoming—Student officers elected for 1958–59 are *Jack Hahn,* President; *Richard Hoy,* Vice President; *Mary Lou Titensor,* Secretary; *Myrtis Huff,* Treasurer; and *John Myers, Jr.,* Historian.

This month

in all leading medical journals and through direct mail

Warner-Chilcott announces

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Current Comment

World Health

The following remarks by U.S. Senator Lister Hill of Alabama on the presentation of a plaque by the Washington Board of Trade to Surgeon General Leroy E. Burney of the U.S. Public Health Service on July 1, 1958 are of such importance that they are reproduced here in full.

Dr. Burney, members of the Washington Board of Trade, and distinguished guests:

I am honored to be here today and to have the privilege of expressing to Dr. Burney our appreciation of his work and our thanks for his unselfish and devoted service.

First, let me congratulate you, Dr. Burney, on your recent election as President of the Eleventh World Health Assembly.

We know the outstanding leadership you have given to the United States Public Health Service and your far-seeing work in preventive medicine. These have served chiefly the people of the United States.

Now, as President of the World Health Assembly, the other nations of the world can benefit from your broad experience in preventive medicine, from your administrative skills gained in directing and coordinating State and Federal health programs, from your military medical experience in the Mediterranean and tropical areas, and from your deep understanding of the essential place of sympathetic human relationships in meeting health needs everywhere.

You assume the Presidency of the World Health Assembly at a challenging time in the development of international health programs. For the Assembly must determine the policy and establish the programs through which the World Heath Organization will seek to complete the great unfinished job of medicine and medical research.

The under-developed areas of the world present the major field for this unfinished job. We in America, with the vast resources of modern medicine at hand, forget that two-thirds of the earth's two and a half billion people know only a submarginal living which makes sickness and undernourishmment the normal state of life. We forget that every 60 seconds twenty people die somewhere in these under-privileged areas of malaria, tuberculosis, or intestinal infections. We forget that the fundamental needs for sanitation, pure water, and simple preventive medicine are the pressing problems of life to these peoples.

In the under-developed countries as in the more developed nations of Europe and North America we find that cancer and heart disease—the ancient killers of mankind—take an increasing toll. A recent United Nations report tells us that cancer is rising in its incidence in 33 countries in all parts of the world.

Menacing mankind are new and undiscovered diseases. Viruses change, and those harmless today may through mutation become deadly tomorrow. Viruses which do not harm a people accustomed to them can attack people unfamiliar with them. Man, the most transient of earth's creatures, creates many of his own health hazards. The airplane carries its passengers between continents in far less time than the incubation period of many diseases. And we are only hours away by plane from the yellow fever of the tropic jungle, from the sleeping sickness of Equatorial Africa, from cholera and bubonic plague.

Ten years ago the World Health Organization was created in recognition of these multiplying dangers to health. We know some of the inspiring stories of the World Health Organization and its work in preventive and applied medicine: The mass injections of penicillin shots in Haiti to combat yaws. The millions of shots against yellow fever, now resurgent in South America. The development of INCAP-8, a high-protein food to combat malignant malnutrition in children. The use of modern drugs and techniques against malaria, louse-borne diseases, leprosy, and other diseases almost unknown to us in the United States.

As the World Health Organization enters its second decade—under your leadership, Dr. Burney—it enters a new phase which must make new and intensive use of medical research. The World Health Assembly has recognized this change in strategy in the global war against disease. And the Assembly recently accepted a $300,000 grant from the United States for a special study of new and more effective ways of promoting medical research on an international basis.

Here in America we believe that within a few short years the world will see a momentous breakthrough of medical knowledge that will enable us to overcome many of the dread diseases that have plagued and baffled man through the ages. There is reason for confidence that this breakthrough will yield many answers in the battle against heart disease, cancer, mental illness, and other crippling and degenerative diseases.

I propose that the United States give added impetus to this imminent breakthrough by initiating a dynamic program of international medicial research. The essential elements of this international medical research program would be these:

1. Cooperative international support of medical research directed against the major diseases which plague mankind today.
2. Exchange of research workers and clinicians so that all countries of the world might obtain the benefits of the newest developments in research.
3. Distribution of drugs, medical equipment, and rehabilitation appliances to all parts of the world.
4. Establishment of demonstration projects to disseminate to all areas of the world the latest techniques for combating diseases.
5. Organization of an international clearing house on the latest developments in medical research, including the establishment of appropriate translation services.

Such a program should become a major and vital part of American foreign policy. In our effort to win the trust and friendship of the uncommitted millions in the world, what more important boon can we bring to them than the promise of good health and long life?

American medical research has developed many magnificent life-giving agents which can be spread throughout the earth. Can we measure the good will created by our manufacture and distribution of the Salk vaccine to the children of the world? This magnificent gift of medical research has even penetrated the Iron Curtain and is being manufactured and distributed widely in Soviet Russia.

Medical science as an instrument of foreign policy would find America's great strength not only in our medical knowledge and skill, but in the humanitarian instincts, the generosity, the compassion of our people.

From all these resources—spiritual as well as material—we must make a larger investment in the health of the world. We cannot wait. Death is not gradual in the tropics. The patience of the neglected is not everlasting. We who bear in our hands the precious means to a longer and a happier life must extend it quickly and abundantly to the sick, the weak, and the suffering of the world.

> "Men's hearts wait upon us; men's lives hang in the balance; men's hopes call upon us to say what we will do."

Oversight

It has just been brought to the attention of the Editor of THIS JOURNAL that no credit was given to Pfizer Laboratories and J. B. Roerig Divisions of Charles Pfizer & Co., Inc., on page 307 of the May Issue for sponsoring the outstanding entertainment at the APhA Annual Banquet in the Biltmore Bowl at the Biltmore Hotel in Los Angeles.

This of course was purely an oversight. The concluding evening of the APhA Convention on April 25 was made doubly enjoyable by the efforts of G. H. Weiler, Jr., Director of Public Relations for Pfizer, and the other members of his staff and of his company. The oversight is regretted and we now belatedly but wholeheartedly recognize this splendid support.

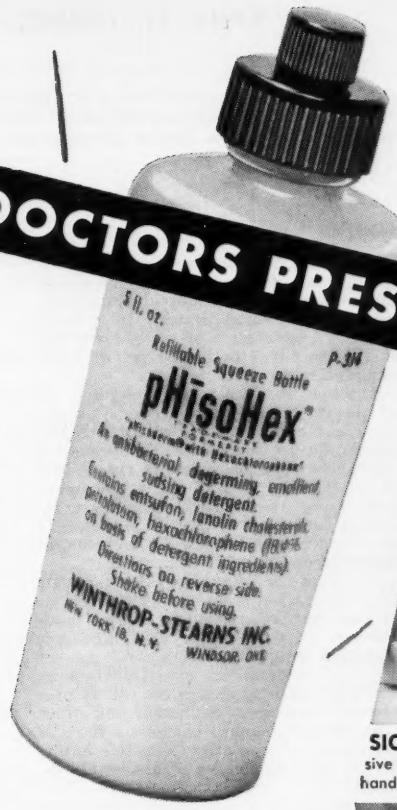
Medical Care for Dependents

The Secretary of Defense and the Secretary of Health, Education, and Welfare have authorized an amendment stating that eligible dependents of members of the uniformed services, regardless of service affiliation, shall be given equal opportunity for medical care.

By means of cross-utilization of service medical facilities, dependents may request and be furnished medical

Continued on page 468

DOCTORS PRESCRIBE



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A creamy, white emulsion, pHisoHex combines the nonalkaline detergent, pHisoderm with a full 3% of the powerful bactericide, hexachlorophene. pHisoHex degerms the skin and scalp more effectively than soap and forms an effective antiseptic "shield" that remains on the skin *even after rinsing.*

Intensive professional advertising, detailing and sampling continue to build increased interest and acceptance for pHisoHex.

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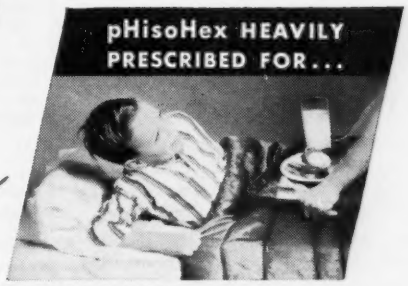
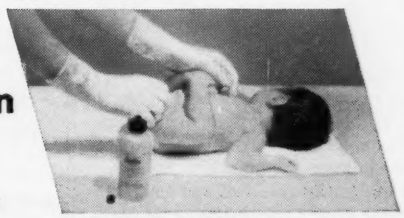
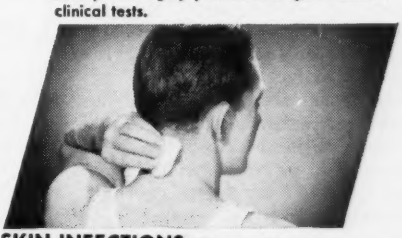


SICK ROOM USE: Regular and exclusive use reduces to a minimum the danger of handborne infection.



BATHING INFANTS: Inhibits growth of diaper rash bacteria. Nonirritating. Safety thoroughly proved through extensive clinical tests.



SKIN INFECTIONS: Brings skin a detergent with pH similar to skin. Helps to preserve skin's acid mantle, so guards against irritants and pathogens.

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PHARMACEUTICALS IN DAILY DEMAND
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Current Comment

Continued from page 466

care at the medical facility of the uniformed service serving the area in which they reside or in the medical facility of the sponsor's own uniformed service, depending upon the capability of the medical facilities concerned.

Commanders of uniformed services and hospitals will establish necessary liaison coordination with the representatives of the local medical society and the civilian hospital facilities as appropriate, to insure to the maximum extent possible the smooth referral of excess dependent patient loads to civilian medical facilities when such referrals appear desirable. [*Federal Register*, **23,** 4410(June 19, 1958).]

The Turning Point

The year 1956 saw a turning point in the nation's fight against mental illness. For the first time in years the rolls in the mental hospitals of the nation showed a drop. Although more patients were entering the hospitals, even more were leaving.

From June 1956 to June 1957 the number of resident patients in public mental hospitals in the United States again dropped—from 551,390 to 548,563, a reduction of 2,827.

As the citizens of this country recognize the need to fight the nation's No. 1 health problem, more funds are becoming available. The trend is evident from the following figures.

The budget for the National Institute of Mental Health ranged from $4,250,000 in 1948 to $14,147,500 in 1955, still grossly inadequate. Then Congress doubled the NIMH budget, increasing it from $18,001,000 in fiscal 1956 to $35,197,000 in 1957. For fiscal 1958 congress approved $39,217,000.

Many states are now changing their attitude toward the mentally ill. Some will now care for a nonresident patient or return him to his own state or even transfer him to a third state, depending on what is best for him. State laws are being modernized in regard to commitment, detention, and care and treatment of the mentally ill.

Important strides are being made in research. The Joint Commission on Mental Illness and Health, mandated by congress in 1955, to assess mental health conditions and resources in the U.S. and to recommend a rationally planned, cooperative nation-wide mental health program, has completed 2 of the 12 studies launched.

The Schizophrenia Research Program, directed by the Supreme Council of the 33rd Degree Scottish Rite Freemasonry,

Continued on page 487

APHA STATEMENT ON FAIR TRADE

Statement by Mr. Louis J. Fischl of Oakland, California, President of the American Pharmaceutical Association, to the Special Subcommittee on Fair Trade of the Senate Committee on Interstate and Foreign Commerce in support of the bills S. 3850 and H.R. 10527

July 22, 1958

The AMERICAN PHARMACEUTICAL ASSOCIATION, organized in 1852, is the oldest national association of individual pharmacists in the United States. It is completely representative of the pharmacists of this country, both vocationally and geographically.

Through its House of Delegates, in which every state pharmaceutical association and every national pharmaceutical association are represented, it speaks for the practicing pharmacists of the United States. About 75% of the active members of the ASSOCIATION are either community pharmacy owners or pharmacists employed in such retail establishments, in hospitals, and in other institutions.

Although the AMERICAN PHARMACEUTICAL ASSOCIATION is not a trade association, the fact that prescriptions of medical practitioners are compounded and dispensed, and that drugs, medicines, and poisons are sold at retail in many pharmacies which are also engaged in the sale of proprietary medicines, cosmetics, and other branded merchandise causes us to take cognizance of legislative proposals affecting the business policies of these establishments.

At the recent annual convention of the AMERICAN PHARMACEUTICAL ASSOCIATION in Los Angeles, the following resolution was passed:

> WHEREAS, the principle of Fair Trade has been effective in conferring to the marketing of many products a stability of markets which is in fact and in practice in the best interests of the public, and
>
> WHEREAS, there is currently pending in the Congress a bill to amend the Federal Trade Commission Act to equalize rights in the distribution of identified merchandise (H.R. 10527) which would tend to help insure such stability of markets, be it
>
> RESOLVED, that the American Pharmaceutical Association go on record as endorsing H.R. 10527.[1]

The Congress, more than any other body in our country, is cognizant that in matters of security, health, education, and welfare our Government has wisely insisted on quality at a fair price. The predatory price cutters and bait advertisers shy away from traffic with the United States Government because the penalties of falseness are severe and detection is almost certain.

Our ASSOCIATION maintains that the principle of *caveat emptor* has no place in the environment of public health; and no health institution in our country is visited more frequently than the American pharmacy or drug store. Geographically the vast majority of these health service centers are located in the rural communities and neighborhood shopping centers of urban areas. They are strategically located to serve the convenience and emergency health needs of the American family. The professional as well as the economic success of these pharmacies or drug stores depends on the satisfaction of a steady patronage to whom quality products and honest service are offered at a reasonable price. The American pharmacist rejects the split personality idea of bait advertising, predatory price cutting, and discount operation on one hand—and professional health service dedicated to quality and service on the other hand.

The distinguished Chairman of the Federal Trade Commission, the Honorable John W. Gwynne, told a Senate investigating subcommittee this month that he would favor legislation to prohibit loss leader selling where the purpose of the selling is to destroy competition. It is difficult for us to rationalize any other result from loss leader selling than destruction of competition which in principle is barred under a clause of the Robinson-Patman Act.

It is our understanding that most theorists and students of free competition who object to S. 3850 (H.R. 10527) are equally vociferous in their denunciation of *caveat emptor* which includes the subterfuges of bait advertising, loss leaders, and predatory competition.

If there is one very pertinent observation that we might call to the Committee's attention it is that the Federal enabling laws (Miller-Tydings Act and the McGuire Act) and state statutes (at one time constitutional in 45 states), concerned with resale price maintenance, were until most recently an effective and accepted solution to this basic problem. The opponents of this legislation, past and present, have failed to offer a realistic alternative solution.

Whether the Congress enacts S. 3850 (H.R. 10527) or substitute bills which accomplish the same objective is secondary to the urgency at this time for positive action to preserve reasonable and honest competitive practices in the retail environment.

The Bureau of Education on Fair Trade, the National Association of Retail Druggists, and others who have conducted continuous research in this area of highly specialized economic legislation have appeared before this Committee and presented expert, detailed testimony in support of a basic principle which the AMERICAN PHARMACEUTICAL ASSOCIATION heartily endorses.

We respectfully submit that the members of the Senate and House of Representatives would be giving the individual purchaser as well as the individual seller an economic environment consistent with the American way of life by approving S. 3850 and H.R. 10527.

Louis J. Fischl, President

AMERICAN PHARMACEUTICAL ASSOCIATION
2215 Constitution Avenue, N.W.
Washington 7, D.C.

[1] Companion Bill S. 3850 was not introduced until after the American Pharmaceutical Association Convention, which was held during the week of April 20, 1958.

APhA Women's Auxiliary

We appreciate the opportunity to greet the members of the Women's Auxiliary through the pages of THIS JOURNAL and trust that members of the APhA, as well as of the Auxiliary, will be interested in our activities between the annual conventions.

Pharmacy Students' Wives Club

A most sincere and hearty welcome is extended by the officers and members of the Women's Auxiliary of the AMERICAN PHARMACEUTICAL ASSOCIATION to the Pharmacy Student Wives Clubs, who, by an amendment passed at the Los Angeles Convention, have become an official part of the Auxiliary. Eligible for membership are wives of Student Branch members.

Mrs. Charles F. Poe, of Boulder, Colorado, who has done so much in behalf of this group, was appointed chairman of the committee and she will be assisted by Mrs. J. B. Burt, of Lincoln, Nebraska, Mrs. Fabian Maurina, of Detroit, Michigan, Mrs. Hugo H. Schaefer, of Yonkers, New York, and Mrs. W. D. Strothers, of Weatherford, Oklahoma. Mrs. Elmer Plein, of Seattle, Washington, Secretary of the Auxiliary, will be an ex-officio member.

Life Memberships

Life memberships in the Auxiliary are now available to those desiring them, by sending $25 to Mrs. Earl P. Guth, Treasurer, 533 Acton Road, Columbus 14, Ohio. The membership card will be enclosed in a plastic case.

Hugh Mercer Apothecary Shop

A committee of the Auxiliary was appointed to make a study of this interesting and historical project of the APhA. The committee includes Mrs. A. G. DuMez, of Baltimore, Maryland, Mrs. F. Royce Franzoni, of Arlington, Virginia, and Mrs. William Calkins, of Washington D.C. Congratulations are in order to Mrs. DuMez, and the Auxiliary is honored to learn of her election to the Board of Managers of the Friends of Historical Pharmacy for the ensuing year. Knowing of her interest and ability, the Board should be commended for its excellent judgment.

Student Loan Committee

Mrs. Troy C. Daniels, of San Francisco, was reappointed chairman of the Student Loan Committee for the coming year and will be assisted by Mrs. Louis Fischl, of Oakland, California, and Mrs. John MacCartney of Detroit, Michigan. In addition, as in the past, the President, First Vice President, and Treasurer of the Auxiliary are also members. Since a few weeks are required to process loans, members are urged to inform interested women pharmacy students to contact the Chairman or committee members as soon as possible.

Constitution and By-Laws

Mrs. George D. Beal, of Pittsburgh, Pennsylvania, has been appointed Chairman of the Auxiliary's Committee on Constitution and By-laws, with Mrs. Bernard Carey of Syracuse, New York, Mrs. Geo. Scharringhausen, of Park Ridge, Illinois, and Mrs. Ewart Swinyard, of Salt Lake City, Utah, serving with her.

Our Sympathy

We extend our deepest sympathy to Dr. John B. Heinz of Salt Lake City, on the death of his wife, Dorothy, which occurred shortly after returning from the Los Angeles Convention. Memories of her wonderful friendly personality will be cherished by all who knew her.

Dorothy M. Cusick, President
APhA Women's Auxiliary

AUGUST

Public Relations

SCHEDULE

■ There is no such thing as self-sufficiency. In our complex industrial society, we must depend on one another. It is our individual responsibility and our duty to our fellow pharmacists to maintain prescribed ethical standards—to portray our business and profession in such a way that good public relations is everyday conduct, the impact of which can be felt across the nation—by everyone.

Special Events—Now is the time to plan your National Pharmacy Week window display for October!

Speeches—An excellent subject for this month's speech would be Heat Prostration. The subject is timely and will be of considerable interest to those groups who hold summer meetings. Consult a friendly physician for pertinent facts.

Newspapers—An informative, short article on the subject "rabies" and the myth of "Dog Days" should find ready acceptance among community and local newspapers. A good feature for your newspaper ad would be "Deodorants—Their Use and Need."

Radio and T.V.—Program directors should be pleased to have you supply several eight and twelve second spot announcements on "Summer Care of the Feet." A chiropodist or podiatrist of your acquaintance can provide facts and information.

Direct Mail—One mailing to physicians this month on seasonal prescription items and one mailing to the laity on emergency prescription service will give your new direct mail program a dandy start.

Bulletins—Your employees' bulletin should review your year-to-date public relations efforts and solicit suggestions for additional features for the coming busy fall months. Demonstrate the proper handling of the prescription customer who is in a hurry and is irritated over the seeming delay in the filling of his prescription.

Cynicism is the supreme virtue
. . . of little men.

Prepared by J. Warren Lansdowne, Chairman,
APhA Committee on Public Relations.

JAPhA

Editorial

What's In A Degree?

Individual and collective accomplishment in a profession as well as recruitment of personnel are made easy when that profession is highly regarded by the public in general. Sometimes the factors which tend to create this high regard may seem to be unimportant at a casual glance, whereas in reality they are vital building blocks of professional prestige. One such factor which has a subtle but strong impact on the minds of the public is the use of the profesional title "Doctor," which has always meant "teacher" or "learned person."

Four Types of Doctorates

There are three main types of degrees entitling the bearer to be called "Doctor." First, there are the honorary degrees which you obtain simply by walking across the platform to the rostrum and allowing an academician to place a hood around your neck and a scroll in your hand. These symbols and degrees are given in recognition of outstanding contributions in the biological, physical, or social fields, or the humanities. They may also be given because a person is in a position to give something to the institution which confers the degree, in the form of economic, or political, or other type of support. Most of these degrees are appropriate recognition for real contributions to mankind; a few, unfortunately, are cynical handouts which cheapen the whole activity and intent. Occasionally, for example, they are conferred to cover up a deficiency in an individual who has progressed to a status beyond that to which he is entitled by virtue of his educational background. Honorary degrees not earned by formal study include the D.D., L.H.D., Litt.D., LL.D., and sometimes the D.Sc. The D.Sc. is one of the most highly cherished of all honorary degrees because of its special significance in the fields of science.

Secondly, there are the professional doctorates. These are obtained by satisfactorily completing prescribed college courses of 4 to 6 years duration. Success in any of these curricula largely depends on the ability to memorize a selected body of facts and theories and the ability to perform certain exacting manual techniques or laboratory procedures. These courses are primarily undergraduate in content. Upon completion of such prescribed courses the graduate is usually reasonably competent to practice a profession such as dentistry, medicine, pharmacy, theology, or veterinary medicine. Recognized professional degrees include the D.D.S., D.V.M., M.D., Pharm.D., and S.T.D.

The Pharm.D. degree, initiated by the University of Southern California School of Pharmacy, and gradually being adopted by other colleges, has met a real need for a professional doctorate in Pharmacy. On the basis of 2 years of preprofessional study plus 4 of specialized study, a student over a period of 6 years obtains a scientific, cultural, and professional background which gives him at least the equivalent status of other members of the health professions who hold the M.D., D.D.S., or other professional doctorates.

Finally, there is the doctorate which is awarded to those who demonstrate outstanding ability to use their minds in reasoning and in creative thinking. This degree is granted only after several years of intensive postgraduate studies, first on a broad base and gradually focusing on a specific problem to give deep insight into at least one area of human knowledge and to develop the mental tools which can be applied according to general principles in any given field. Emphasis is placed on problem-solving through logical analysis and synthesis of ideas and of matter. Both physical matter and the intangibles are examined so that individual philosophies may be evolved and the frontiers of knowledge advanced. Because emphasis is placed on how to find what is already known and how to apply knowledge we already have in discovering new knowledge about life in both its tangible and its intangible forms, research is an essential part of the activity of every candidate for this degree, the Ph.D.

There are also a large number of "doctorates" assumed by quacks and health practitioners operating on the fringes of Pharmacy and Medicine and Religion. These "professional" degrees are used merely to impress the gullible, unfortunate victims who come for advice to those who use these completely phony titles.

Because the basic principles of higher education are so broad in their application, the Doctor of Philosophy degree is granted in a wide range of disciplines in many areas of learning and is the label which guarantees a certain minimum degree of competence for the teacher

or the research worker. To be sure, there are other degrees which represent additional study in some field beyond the undergraduate level. Nevertheless, there is only one degree awarded on a world-wide basis for superior learning on highest levels. This is the Ph.D. It is for this reason that holders of the M.D.. Pharm.D., or other professional doctorates occasionally earn the Ph.D. because they realize they need the mental training it entails if they wish to teach or do research.

Simply because there is so much prestige attached to the Doctor of Philosophy degree the holders of it are inclined to be, in fact can afford to be, modest about it. Modesty should not, however, be carried to the point of giving others a false impression of the holder of the degree or of the degree itself. Belittling any honor not only accomplishes the belittlement of the donor, but also the recipient.

Titles and Prestige

Harold Seymour, writing in the July, 1958 issue of *The Educational Record*, points out that the prestige of the academic profession in America is not what it should be. He blames this situation partly on the attitude and practices of scholars:

> Professors themselves are partly to blame. They need to assume more responsibility for raising public regard for their calling. One of their failings in this respect that is particularly lamentable is the custom of not using their titles.

Dr. Seymour points out that unwarranted modesty is exhibited in a variety of ways, and after describing a large number of deferential practices, he says:

> Members of other professions and callings and those who have honorary degrees rarely exhibit such inhibition about using their legitimate titles. Senators and Congressmen are always addressed in proper form. Clergymen sign "Reverend"; priests present themselves as "Father." Physicians and dentists are especially punctilious about using the title "Doctor." Notice sometime how they introduce themselves or answer the telephone. Listen to a television or radio panel of physicians unfailingly calling each other "Doctor." Even in their senior year medical students are known to begin addressing each other as "Doctor." And though scrupulous about their own prerogatives, some physicians studiously avoid calling Ph.D.'s "Doctor."

Physicians forget that it was a D.Sc., Dr. Abraham Flexner, whose investigation of medical schools lead to the "Flexner Report," a milestone in the advancement of medical education. His M.D.'s were honorary also.

On the other hand it is possible to go too far in the other direction and attach undue importance to the degree. We heard a physician a few weeks ago telling a 10-year-old child in the neighborhood to call him "Doctor" when that child unknowingly called him "Mister." We also frequently are addressed by that obnoxious term of "Doc" by taxi drivers and other public service personnel as a subtle form of flattery to guarantee a larger tip.

Unless a person has undergone the mental disciplining encountered in truly advanced study he cannot begin to appreciate how those who have been thus qualified approach problems and think about them. Of course there are a few Ph.D.'s handed out to students who do not merit the honor, but this fact soon becomes self-evident and nobody bothers to pay any attention to the man or the degree.

Face Value

As a general rule persons are taken at face value. We could name a number of so-called leaders who have given evidence of deep feelings of insecurity and others who are not exactly proud of the position which gives them their livelihood. When you really get to know these people and analyze them you find they are putting on a wonderful "front," yet practically all the time their colleagues and acquaintances speak of them with considerable respect, because they conduct themselves with a cloak of dignity, and they act with a bulldog aggressiveness often using their honorary doctorates with abandon. On the other hand the elite of the intelligentsia, much more concerned with the really important things in life, look with disdain on these pretenders.

The degree does not necessarily make the man. It contributes to some extent to the total picture of a solid academician or scientist or professional man. We have seen men, however, with hard-earned Doctor of Philosophy degrees lack the stature that should accompany it and who are addressed as "Doctor" with a note of mockery and even derision. Contrasted with this we have seen men with only a high school or undergraduate degree from an obscure school who have exhibited real leadership and organizational ability and who have risen to positions of prestige nationally and internationally.

The Best Policy

In the academic and professional worlds the more earned degrees a person possesses the greater is the probability of his success. Persons in the teaching, scientific, or health professions should therefore enhance not only their own stature but also that of their colleagues by using the proper titles conferred. All persons in the business or industrial world are appropriately called "Mister," except, perhaps, those industrialists with doctorates who are involved with the preparation of pharmaceutical products.

We feel very definitely that just as in all other aspects of living there is always a happy, middle-of-the-road attitude. Moderation in all things pays the biggest dividends. A quiet dignity, professional efficiency, and friendly relations with all other human beings, combined with the use of titles only when appropriate, all the while retaining a truly modest approach, is the best policy. Treat others as you would like others to treat you. If you are a teacher or a scientist or a member of a profession, act like one.

In the final analysis a man is judged by the contributions which other people *think* he has made. True leadership is not acquired by appending degrees after your name. If you have earned the right to be called "Doctor," you will automatically receive that recognition.

Eric W. Martin

STRAIGHT FROM Headquarters

rt P. Fischelis,
Secretary

Milestones in Scientific and Professional Literature

One of the prime qualifications of a profession is that it must possess and cultivate a distinctive literature. The physical and biological sciences, as well as the health professions, have carefully cultivated this qualification.

We wish to extend congratulations and best wishes to the *Journal of the American Medical Association* which is currently observing the 75th anniversary of its founding.

The special anniversary edition of the *Journal* which appeared recently contains tributes from many sources to its importance in professional as well as world affairs.

We have come to look upon the weekly issues of the *Journal* of the AMA as the authentic voice of the medical profession in the United States, in addition to providing the record of current progress in medicine as contributed by individual members of the profession and the staff of the *Journal*.

The high standard of literary excellence and the authenticity of the subject matter in its scientific and professional sphere, maintained by the *Journal*, have been appreciated by the allied medical professions as well as the profession of Medicine itself.

To the past editors of the *Journal* and to Dr. Austin Smith, under whose editorial guidance it now appears, we extend congratulations on a service well performed, and upon the high character of leadership which this publication gives to medical journalism in the United States.

While tributes from the allied medical professions are not included in the special articles which constitute the 75th anniversary edition of the *Journal*, the drug industry can take satisfaction in the fact that out of approximately 141 pages of advertising carried in that edition, it has contributed about 123. The high quality of advertising in American medical publications generally has been due in no small measure to the standards set by the *Journal* of the AMA for this section of the publication over the years. Physicians have been educated by the *Journal* to place equal reliance on statements in its reading and advertising pages which is, of course, as it should be.

While we are on the subject of scientific and professional literature, we wish to take cognizance also of the announcement of the impending retirement of Dr. E. J. Crane, who has been associated with *Chemical Abstracts*, published by the American Chemical Society, for 48 years, 44 of them as editor. As stated so well by Walter J. Murphy, Editorial Director of *Chemical and Engineering News*, "any words we might pen would be most inadequate to describe this gifted individual's invaluable contribution to chemistry." *Chemical Abstracts* has been the indispensable tool of chemical and other scientific researchers as well as of the chemical and allied industries. This publication, more than any other in the world, has served not only chemistry but all of the related arts and sciences which depend upon chemistry for their progress.

Abstracting, documentation, and retrieval of scientific knowledge have been accomplished to a magnificent extent by this publication, and it is to the credit of American chemists and the American chemical industry that they have given unstinted moral and financial support to Dr. Crane in providing an unequalled storehouse of records of information and source material.

American Pharmacy has taken full advantage of the editorial brilliance of both the *Journal of the American Medical Association* and *Chemical Abstracts* to such an extent that there has been a tendency to play down the importance of the preservation of our own literature, which may not come within the scope of notice of these contemporary publications.

It is high time that we re-examine the extent to which contributions to the literature of American Pharmacy, which do not necessarily fall into the sphere of medical science as portrayed in the *Journal of the American Medical Association*, or into the science of chemistry in its broadest interpretation, as envisioned by *Chemical Abstracts*, are being retrieved, documented, and abstracted. We believe such re-examination would reveal that important articles which contribute to the professional practice of Pharmacy and its many coordinate and related spheres are not being recorded or assembled for easy access to writers, historians, and research workers in the socio-economic, administrative, legislative, and educational divisions of our profession. This is a situation that requires immediate attention.

AMA Convention Activities

More than 13,000 physicians attended the San Francisco Convention of the American Medical Association during the week of June 23. At this meeting Dr. Gunnar Gundersen of La Crosse, Wisconsin was in-

augurated as President and Dr. Louis M. Orr of Orlando, Florida was named President-Elect. Dr. F. J. L. Blasingame who began to function as General Manager of the Association on January 1, 1958 was named Executive Vice President, and Dr. Leonard W. Larson of Bismarck, N.D. was elected Chairman of the Board of Trustees.

Among the significant actions taken by the House of Delegates was the setting up of an expanded voluntary program to eliminate objectionable advertising of over-the-counter medicines. This program is to be coordinated by the National Better Business Bureau with financial as well as moral support from the AMA.

Probably the most debated issue of the meeting stemmed from three resolutions urging that the AMA reaffirm its support of voluntary health agencies. The House of Delegates praised these agencies but fear was expressed that the "United Funds" could exert lay control over huge health funds which could be administered with greater wisdom and balance by medical men. As a result of the floor discussions, the House adopted a four point resolution which commended the principal voluntary health agencies, urged that they be "free to conduct" their own programs, asked that the American Medical Research Foundation "take no action which would endanger the constructive activities" of these agencies, and recommended that the Board of Trustees continue active study "of these perplexing problems."

No action was taken at this meeting which in any way changed the Principles of Ethics of the Association or any pronouncements or interpretations with regard to the ownership of clinic pharmacies or the dispensing of drugs by physicians. The status of these matters as far as the Association's Principles of Ethics are concerned is covered by the following statements:

"Physicians should recognize and promote the practice of pharmacy as a profession and should recognize the cooperation of the pharmacist in education of the public concerning the practice of ethical and scientific medicine."

"It is not unethical for a physician to prescribe or supply drugs, remedies, or appliances as long as there is no exploitation of the patient."

"The acceptance of rebates on prescriptions and appliances or of commissions from those who aid in the care of patients is unethical."

APhA President Louis J. Fischl represented the ASSOCIATION at the opening session of the House of Delegates.

George E. Crossen

Our sympathy is extended to the family of George E. Crossen and to the faculty and student body of the School of Pharmacy of Oregon State College in the death of Dean George E. Crossen who passed away on June 28.

Dr. Crossen joined the AMERICAN PHARMACEUTICAL ASSOCIATION in 1934 and was a life member. He served the organization well in numerous capacities, especially as a member and chairman of the Committee on Resolutions, and currently he was a candidate for membership on the Council of the ASSOCIATION.

Dean Crossen was born in St. Paul, Minnesota in 1905 and received his undergraduate and graduate education at the University of Minnesota. He served as Dean of Drake University College of Pharmacy from 1942 to 1945 before going to Oregon State College in the same capacity.

The Legislative Situation in Washington

As these lines are being written the Congress of the United States is hurrying toward adjournment which is scheduled for the middle of August. It is not probable that the Near East situation will require extension of the adjournment date although this is something that no one can foretell.

Pharmacists are naturally anxious to know what may be enacted in the way of federal legislation at this session that will affect them. To those who are anxious about the developments in the Fair Trade situation we may point out that the outlook for the enactment of a National Fair Trade Act does not appear very rosy at this time. Senate Committee hearings are currently in progress on S.3850, the Humphrey Fair Trade bill. The statement regarding this legislation, filed for the record with the Senate Sub-committee, on behalf of the AMERICAN PHARMACEUTICAL ASSOCIATION, by President Louis J. Fischl is printed on page 468. The House Committee dealing with the companion bill on this subject has not reported it out at this writing.

The future of the National Library of Medicine, which is the most extensive library in our field in the Nation's capital, is assured as a result of congressional legislation. A new building for this world famous institution will be erected at a cost of about $6,950,000 on the grounds of the National Institutes of Health in Bethesda, Maryland. There is a splendid collection of pharmaceutical books and journals in this library. It is good to know that both from an historical and a contemporary aspect the literature of pharmacy, which is a part of this collection, will be preserved in an appropriate environment and at a most desirable location.

Legislation dealing with Social Security affecting the practice of pharmacy, and pharmacists *per se*, is included in numerous bills pending before the Congress. Of these, the Forand Bill carries potential implications for compulsory national health insurance for those who have reached the retirement age. The hearings which have been held on this bill to date do not indicate that there will be action on this measure at this session of the Congress.

The position of the AMERICAN PHARMACEUTICAL ASSOCIATION on this legislation has been that further study of its provisions are necessary and that any tendency toward compulsory national health insurance in this or any other bills should be carefully guarded against. It is quite likely that this Congress will postpone consideration of the Forand Bill so that the principles involved in the bill may be given further study and also to enable both the Commission appointed by the Department of Health, Education and Welfare, and private professional agencies to complete their studies and offer their recommendations.

There is a good possibility that the Jenkins-Keogh bills may be enacted. This legislation will provide an opportunity for those who do not come under Social Security at present to finance adequate retirement insurance for themselves during their productive years without being taxed to do so.

First in a three-part series discussing

a rational basis for the preparation of

ophthalmic solutions

By | *Sidney Riegelman, Ph.D., and Daniel G. Vaughan, Jr., M.D.**

PHARMACISTS AND PHYSICIANS in general do not recognize that eye solutions should be prepared with at least as much care as intravenous solutions. Eye drops are often instilled into eyes traumatized by accident or surgery, and they are then potentially even more dangerous than intravenous injections. The cornea and tissues lining the anterior chamber constitute an extremely rich cultural environment for infectious agents, yet lack the bloodstream's normal defenses.

The most important factors to consider when preparing an ophthalmic solution are tonicity, pH, stability, viscosity, sterility, and selection of a preservative. Unfortunately the most important of these, sterility, has received the least attention from both pharmacists and ophthalmologists. It is desirable that any eye solution be stable, isotonic, and at the proper pH, but no one has ever lost an eye because a solution was partly decomposed or mildly irritating. The instillation of an unsterile solution into an injured eye, on the other hand, has all too often been disastrous.

In the present discussion, the various factors enumerated above will be examined in turn while it is borne constantly in mind that the paramount consideration is solution sterility. When a compromise must be made, it must be in favor of sterility. Our final objective is to formulate a system for the proper preparation and handling of ophthalmic drugs under all conditions. We will propose two different standards for the preparation of eye solutions.

DR. SIDNEY RIEGELMAN, Associate Professor of Pharmacy and Pharmaceutical Chemistry, University of California School of Pharmacy, San Francisco, received his B.S. in Pharmacy in 1943 and his Ph.D. in 1948 from the University of Wisconsin School of Pharmacy. He holds a research appointment with the Proctor Foundation for research in ophthalmology. Dr. Riegelman has been active in research in several pharmaceutical aspects of ophthalmic solutions in association with Dr. D. G. Vaughan, co-author of this paper, and they have published several articles in medical and pharmaceutical literature.

* This experimental work was done as a joint project of the School of Pharmacy and the Department of Ophthalmology, University of California Medical Center, San Francisco. A portion of the research data reported herein was supported by a grant from the National Society for the Prevention of Blindness.

This paper was prepared to serve as a basis for a section on ophthalmic solutions to be included in the Eleventh Edition of the National Formulary.

Tonicity

On the assumption that ophthalmic solutions must be exactly isotonic with tears, the pharmacist has been trained traditionally to adjust the osmotic response of the drug and of the sodium chloride to a precise value. For many years this value was accepted as 1.4% sodium chloride equivalent, the figure apparently first adduced by Lumiere and Chevrotier.[1] These workers felt strongly that the use of hypotonic solutions should be avoided, and to this end they proposed that eye drops be prepared by dissolving the active substances in 1.4% sodium chloride solution without reference to the osmotic effects of the solute. The Swiss Pharmacopeia quoted its results, and 1.4% became the generally accepted figure.

Unfortunately, Lumiere and Chevrotier based their original estimate on an incorrect value for the freezing point of tears. More recent workers, notably Krogh and his associates,[2] with more accurate methods of measurement at their command, have arrived at an osmotic value of 0.9% sodium chloride equivalent, and the pharmacist has adjusted his solutions to coincide with this new figure.

It has become clear, however, that the eye can in fact tolerate a considerable range of tonicity before any pain or discomfort is suffered or any corneal epithelial damage sustained. In 1929 Lipschütz[3] reported that sodium chloride concentrations of 0.6% or lower, and of 1.5% or higher, caused ocular irritation. Krogh and his associates[2] detected evidence of irritation only when the extremes of 0.6% and 2.0% were exceeded. Riegelman and Schwartz[4] evaluated the range of osmotic tolerance by observing patient response and utilizing slit-lamp examination of the fluorescein-stained corneal surface. Twenty-four patients with unilateral conjunctivitis were selected for this study. In a range of sodium chloride concentrations from 0.5% to 2.0%, no pain was suffered nor tissue change detected in either the normal eye or the inflamed eye of any of the 24 subjects.

A recent study of the effect of radioactive $Na^{24}Cl$ on rabbits' eyes was conducted by Maurice.[5] On the basis of carefully controlled permeability determinations, he concluded that sodium chloride solutions in concentrations up to 10% were unlikely to cause any damage to the eye by virtue of their osmotic force.

[1] Lumiere, A. and Chevrotier, J., *Bull. Sci. Pharmacol.*, **20**, 711(1913).

[2] Krogh, A., Lund, C. G., Petersen Bjergaard, K., *Acta Physiol. Scand.*, **1**, 88(1945).

[3] Lipschütz, H., *Klin. Mbl. Augenblick*, **82**, 87(1929).

[4] Riegelman, S., Vaughan, D. G., Jr., and Okumoto, M., THIS JOURNAL, **16**, 742(1955).

[5] Maurice, D. M., *J. Physiol.*, **112**, 367(1951).

The results of this experimental work on rabbits' eyes were borne out in Fenton's clinical study[6] of the use of concentrated solutions of sodium sulfacetamide, a drug that has been used in ophthalmology in concentrations from 10% to 30% since World War II. Fenton studied the osmotic properties and pain-producing characteristics of this compound and found, on the basis of freezing-point determinations, that a 3.5% solution was isotonic with a 0.9% sodium chloride solution; that a 10% solution was isotonic with a 3% sodium chloride solution; and that a 30% solution was isotonic with a 9% sodium chloride solution. In studies conducted

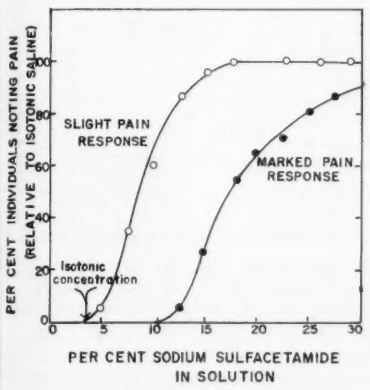


Fig. 1.—Subjective pain response from the ocular instillation of various concentrations of sodium sulfacetamide replotted from the data of Fenton[6].

on 20 volunteers, Fenton used concentrations of sodium sulfacetamide from 2.5% to 30%. His results are recorded in Figure 1. Concentrations below 5% were painless; as they were increased, more pain was felt by more subjects until at 12.5%, some discomfort was felt by all but one subject.

It may be concluded from these various investigations that ophthalmic solutions do not need to be isotonic with tears—a point of considerable importance in view of the meticulous efforts pharmacists have made to meet this unnecessary condition, often over-manipulating the drugs and endangering their sterility in the process. In adjusting the tonicity of an ophthalmic solution, the pharmacist has recourse to tabulated values† for the sodium chloride equivalent of various drugs at one concentration. According to one standard preparation technique, the desired quantity of drug is dissolved in the amount of distilled water (specified in the table) that will yield an isotonic solution, and is then diluted to volume with an isotonic buffer. The danger in this procedure is that the distilled water, unless it has been sterilized and stored under proper conditions, is very likely to be contaminated with bacteria or other microorganisms. As indicated above, it is the contention of the authors that this manipulation is entirely unnecessary and introduces a potential source of dangerous bacterial contamination.

From the accumulated evidence, one may propose that the sodium chloride (equivalent) concentration of an ophthalmic solution may safely range from 0.7% to 1.5%, and in some instances to 2.0%. On this basis it is recommended that an 0.8% sodium chloride solution, or its osmotic equivalent, be used as a stock vehicle. Up to 5% of nearly every common ophthalmic drug[7] can be added directly to such a vehicle without exceeding the "safe" range of tonicity. The resultant solution may be hypertonic with respect to the estimated 0.9% sodium chloride value for tears, but the tears will dilute it so rapidly that only rarely will any greater pain sensation be produced than by an osmotically balanced solution.

It may be noted parenthetically that there are other potential causes of pain directly related to the properties of the drug itself. These include the surface-active and protein-denaturation reactions of many of the local anesthetics, heavy metal salts, and quaternaries at high concentrations. The compounds used in ophthalmology which are highly surface-active, such as the local anesthetic tetracaine hydrochloride (Pontocaine®) adsorb on the corneal membrane. This local increase in drug concentration at the tissue-liquid interface causes the same type of damage that can be expected from a hypertonic solution. The pain caused by the surface-active compound lasts longer, in fact, since the elution of the adsorbed material is difficult to accomplish. In high concentrations the surface-active agents may cause superficial corneal damage as a result of protein denaturation. This response may be cumulative, each additional instillation increasing the damage and concomitant pain.

Hydrogen Ion Concentration (pH)

The pharmacist and ophthalmologist are in complete agreement that the pH of an eye solution must be properly adjusted. How fine this adjustment should be requires clarification, however. Actually, the eye tolerates a fairly wide range of pH in a solution at the amount of its instillation. This is by virtue of four interdependent factors: (1) the neutralizing action of the tears, which constitute a buffer system with a pH of approximately 7.4; (2) the negligible buffer capacity of most ophthalmic solutions when they are compounded in distilled water or isotonic saline solution; (3) the immediate increase in tear-production that follows the instillation of an irritating substance into the conjunctival sac; and (4) the relatively small amount of medication (one or two drops, or roughly 0.05–0.1 ml.) that is normally instilled.

Putting a drop of ophthalmic solution into the conjunctival sac can be likened to a titration procedure in which the tears are analogous to the titrating solution. The carbonic acid, weak organic acids, and proteins in the tears are capable of neutralizing both acidic and basic solutions. The exact measure of this neutralizing capacity is not known, but it is enough in most instances to bring an unbuffered solution's initial pH, which may have been as low as 3.5 or as high as 10.5, to within tolerable limits almost instantaneously.

Unbuffered Solutions

The acid-neutralizing power of the tears can be conjectured from the results of an *in vitro* experiment conducted in our laboratory. In this study, 10 cc. of a number of preparations in various concentrations were titrated with a 1.0 *N* sodium hydroxide solution. The results with respect to 1% atropine sulfate solution and 1% pilocarpine hydrochloride solution, in terms reduced to 1/100 of their experimental values, are given in Table I.

Table I

Microliters of 0.01 *N* NaOH added	pH of 0.1 ml. 1% atropine sulfate soln.	pH of 0.1 ml. 1% pilocarpine hydrochloride soln.
0	4.15	4.30
2	6.01	4.79
4	7.18	5.15
6	7.51	5.28
8	7.80	5.40
10	7.98	5.49

Continued on Page 476

† The methods used to estimate these values often give only rough approximations. The osmotic effect of compounds is concentration-dependent; due to association of the ions in solution, twice the amount of compound does not produce twice the osmotic effect. This can easily be seen by examining the freezing-point data on electrolytes in any handbook of chemistry. Another factor often neglected is the effect of the interaction of the compounds involved; for example, the buffer ions of a drug change the ionic charge and the number of ions in solution.

[6] Fenton, A. H., *Pharm. J.*, 166, 6(1951).

[7] Hammarlund, E. R. and Petersen-Bjergaard, K., *J. Am. Pharm. Assoc., Sci. Ed.*, 47, 107(1958).

Continued from page 475

If it is assumed *arbitrarily* that the acid-neutralizing power of the tears is roughly equivalent to 8–10 microliters of a 0.01 *N* base, then the tears and drug mixture bathing the eye after the addition of two drops of 1% atropine sulfate would be in the normal pH range of 7.4. After the addition of 1% pilocarpine hydrochloride, on the other hand, the pH of the mixture would approximate only 5.5, and if a higher concentration of pilocarpine were instilled, more base would be required to neutralize it.

Figure 2 represents the initial portion of titration curves drawn for several ophthalmic solutions. Three different concentrations of pilocarpine hydrochloride were used. The amount of base added can be considered equivalent to the immediate neutralizing capacity

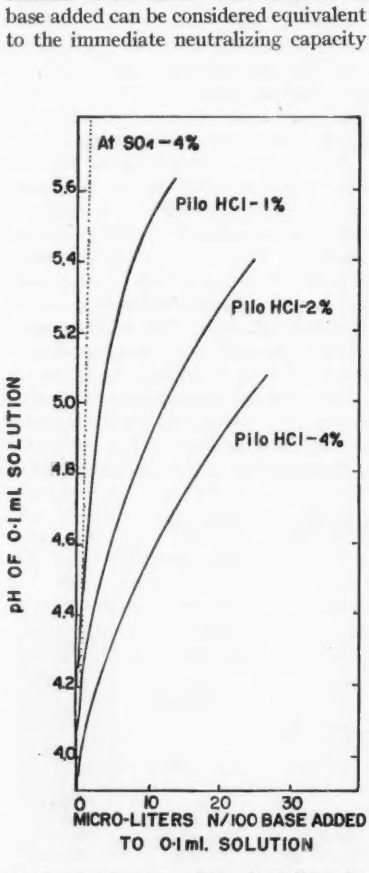


Fig. 2.—Titration curves for various pilocarpine and atropine concentrations. The curves simulate the pH response from two drops of medication when mixed with increasing amounts of tears.

of the tears. When this immediate capacity is exceeded, the proteins of the corneal epithelium are damaged, the sensory nerve endings are stimulated, and a sensation of pain is created. With the secretion of additional tears, the normal pH is restored. The intensity and duration of the pain are related to the acidic reaction of the eye drops. An isotonic solution of 1% pilocarpine hydrochloride in water is only mildly irritating, but 2%, 3%, and 4% solutions, equally isotonic, are progressively more irritating, and more tears will be required to neutralize them. Experiments on a number of volunteers have confirmed this conclusion.

Figure 2 also includes the curve for a 4% atropine sulfate solution. In this case the neutralizing capacity of the tears was adequate so that the effect of adding the atropine solution was to lower the pH only very slightly.

Occasionally the use of the wrong salt will result in pain due to unneutralized acid. An example of this is epinephrine bitartrate which has been used recently in the treatment of glaucoma. Tartaric acid is a dibasic acid and only one carboxyl has been neutralized by the epinephrine base. Figure 3 represents the initial portion of the titration curve for a 2% epinephrine bitartrate solution, compared with the curve for epinephrine hydrochloride of equivalent molar concentration. These curves explain why there is a prolonged pain response to the instillation of two drops of the bitartrate: to restore the normal pH of the eye, ten times the amount of tears is required after the use of the bitartrate than after the use of the physiologically identical hydrochloride.

Buffered Solutions

There are three reasons for buffering ophthalmic drugs: (1) to minimize pain, (2) to insure drug stability, and (3) to control the drug's therapeutic activity. In 1947, Hind and Goyan[8] made an important contribution to ophthalmology by pointing out that these 3 factors could be integrated into a practical compromise by proper consideration of solution pH and buffer capacity. In their original report, they classified ophthalmic drugs according to their physical chemical properties as they were known at that time. This resulted in 5 groups with a special buffered, isotonic vehicle for each group. Changes in our knowledge and perspective have modified some of their original conclusions.

Buffering in Relation to Pain Response.—Hind and Goyan originally suggested that pain and irritation caused by certain eye drops were related to the concentration of the free base in the solution. This may be true in a few cases; however, it is by no means a general case. If it were a general case, a solution of an alkaloidal salt should become more irritating as it is made more alkaline. Actually, when pilocarpine hydrochloride (2–4%) is prepared in a phosphate buffer with a pH of 6.8, the solution is much less irritating than when the compound is dissolved in distilled water or boric acid

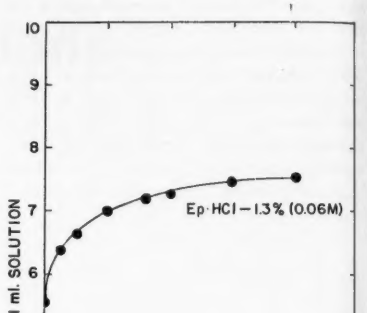


Fig. 3.—Titration curves for two different epinephrine salts. The curves simulate the pH response from two drops of medication when mixed with increasing amounts of tears.

solution even though the former solution contains more than one hundred times the concentration of free base. No irritation is detected when 0.5% physostigmine salicylate is compared in freshly made solutions in the boric acid and phosphate pH 6.8 vehicles.

It would seem, then, that the pain and irritation are caused by the acidity of the eye solution when it is instilled, and that their duration depends on the amount of tears required to bring the pH within the normal range. The buffer solution, such as phosphate buffer at pH 6.8 (a mixture of sodium acid phosphate ($NaH_2PO_4 \cdot H_2O$-0.46%) and disodium phosphate ($Na_2HPO_4 \cdot 7H_2O$–0.88%) neutralizes some of the acidity of the pilocarpine hydrochloride while it is in the bottle and thus markedly reduces the immediate pain response.

Unfortunately, the relatively alkaline buffered solution of this compound is less stable than the unbuffered solution, so that when heat sterilization is necessary, e.g., if the solution is to be used in an injured eye, it must be prepared at the more acid pH. When pilocarpine is prescribed for long-continued home use on intact eyes, however, the patient will much prefer the less painful solution prepared with the phosphate buffer at pH 6.8. To assure constant drug activity, a fresh bottle must be procured once a month.

[8] Hind, H. W., and Goyan, F. M., *J. Am. Pharm. Assoc., Sci. Ed.*, **36**, 33(1947).

Buffering in Relation to Stability — Normal saline solution is a common vehicle for ophthalmic drugs and is in most respects entirely satisfactory. The stability of a drug may be affected by the lack of neutralizing capacity of its vehicle, however. For example, if the container in which a solution is dispensed is made of lime glass, a small amount of base may leach from the glass into the solution[9]. Figure 4 shows the titration curves for a group of ophthalmic drugs. It is apparent from these curves that only a small amount of alkali can shift the pH of the unbuffered solutions to the alkaline range, and the preparation is then subject to hydrolysis and inactivation.

An isotonic sodium chloride solution, lacking buffer capacity, will have no effect on any alkaline reaction that develops in the bottle. In this situation a 2% boric acid solution is a useful substitute. It is equally satisfactory so far as tonicity is concerned, and its weak acidity will neutralize the small amount of alkali that leaches from the glass, yet will itself be readily neutralized by the tears. It will thus contribute to the stability of the drug in the bottle without causing any pain or modifying the therapeutic activity of the compound. A dilute solution of sodium acid phosphate is presently under study as a potentially more effective vehicle than boric acid solution.

Buffering in Relation to Therapeutic Effect—It has been the prevailing opinion in recent years that the proper adjustment of the pH of an ophthalmic solution results in a more rapid therapeutic response. The experimental basis for this opinion was formulated in 1942 when Swan[10] showed that procaine was absorbed into the cornea roughly in proportion to the percentage of free base in solution. Cogan and Kinsey[11] found this equally true of a number of other compounds. As an ophthalmic solution is made more alkaline, increasing amounts of lipoid-soluble, undissociated alkaloidal free base form in the solution and penetrate the cornea. The ionic form of the alkaloid in the same solution penetrates very slowly[11] or not at all.

In 1955, Floyd, Kronfeld and McDonald[12] reviewed these earlier results and attempted to evaluate their clinical significance. They applied two drops of a 1% pilocarpine hydrochloride solution of known pH to each eye tested, and measured the miotic response in a darkened room. The reactions to solutions prepared at two different pH levels were compared. In the first group, the pH was 4.0–4.2, with normal saline, boric acid, or sodium acid phosphate as vehicles. Less than 0.5% of the molecules were in the free base form in these solutions. In the second group the pH approximated the physiological range (6.6–7.4). In these solutions 40–60% of the molecules were in the free base form.

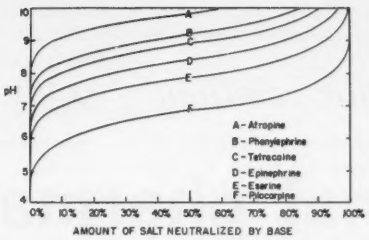

pH
A - Atropine
B - Phenylephrine
C - Tetracaine
D - Epinephrine
E - Eserine
F - Pilocarpine
0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%
AMOUNT OF SALT NEUTRALIZED BY BASE

Fig. 4.—Titration curves for various ophthalmic drugs at equimolar concentration.

The rate of absorption of the drug from the two groups of solutions was approximately the same, i.e., the neutralizing capacity of the tears was adequate to overcome the initial difference in pH and thus to increase the percentage of free base available for absorption. The authors found a slight difference in the minimum pupillary diameter; however, the pilocarpine in the more alkaline vehicle contracted the pupil an estimated 17% more than in the unbuffered solution.

Working independently, Vaughan and Riegelman[13] conducted a similar experiment. They used 10 patients and dilated their eyes with 10% phenylephrine hydrochloride. This fixed the iris in the fully dilated position so that the pupillary light reaction was eliminated. The reactions to a boric acid solution of 1% pilocarpine hydrochloride (pH 4.2) were compared with the reactions to a Sorensen phosphate buffer solution (pH 6.6). In this instance photographs were taken and the pupil size determined from the enlarged image. The authors found that pilocarpine in the more alkaline vehicle had slightly more miotic effect, but the difference was so minute as to be statistically insignificant. It must be acknowledged that a larger study is required before a final conclusion can be made. ■

Note

The second and third parts of this series on ophthalmic solutions will appear during the next few months.

[9] Ervenius, O., and Lindquist, H., *Farm. Revy*, **45**, 577(1946).

[10] Swan, K. C., and White, N. G., *Am. J. Ophthalmol.*, **25**, 1043(1942).

[11] Cogan, D. G., and Kinsey, V. E., *Arch. Ophthalmol.*, **27**, 466, 661, 696(1942).

[12] Floyd, A., Kronfeld, P. C., and McDonald, J. E., *J. Am. Pharm. Assoc., Sci. Ed.*, **42**, 333 (1953).

[13] Riegelman, S., and Vaughan, D. G., Unpublished results.

PA Congress Proceedings

Dr. Robert A. Hardt announces that the 176-page Proceedings of the largest international pharmaceutical meeting ever held in this country, the Fourth Pan American Congress of Pharmacy and Biochemistry held in Washington, D.C. last November, is now ready for distribution. The volume traces the origin of the meeting to the invitation extended at the Third Congress in Sao Paulo, Brazil.

The Proceedings include summary reports of the various sessions of all 12 Congress Sections, with over 200 abstracts of papers in the language of presentation and the English text for 41 Resolutions which were adopted by the Congress.

Every member of the Congress has automatically received a copy of the Proceedings. A limited number of additional copies are available at $2.50 each postpaid from George Griffenhagen, Secretary-General, Fourth Pan American Congress of Pharmacy and Biochemistry, c/o Smithsonian Institution, Washington 25, D.C., U.S.A.

Hospital Formulary Service

The American Hospital Formulary Service, compiled and published by the American Society of Hospital Pharmacists, will be available in September. Hospitals throughout the nation, as well as physicians, pharmacists, and nurses, will be interested in the Service which will provide drug monographs in loose-leaf form together with supplementary monographs to be issued at regular intervals. Thus, for the first time in American history, the tedious, time-consuming task of compiling individual hospital formularies will no longer be necessary.

The drug monographs are being prepared by Dr. William M. Heller, Chief Pharmacist of the University of Arkansas Medical Center, Little Rock, assisted by Dr. Marc Jordin, Head of the Department of Pharmacology of the University of Arkansas School of Pharmacy.

An important factor in the new Formulary Service is that the medical staff of each hospital retains complete authority as to the drugs which will be included in its formulary.

The *American Hospital Formulary* will be distributed through the Hamilton Press, Hamilton, Illinois. The price of the Formulary, which includes the drug monographs, a loose-leaf notebook, and supplementary monographs for 1 year, is as follows: 1 to 9 copies—$15.00 each; 10 to 24 copies—$14.50 each; 25 or more copies—$14.00 each.

Application and use of the service are described by Dr. William M. Heller in an article appearing in the June issue of the *American Journal of Hospital Pharmacy*.

New public relations display featured during

national pharmacy week

Pharmacists across the nation will have a new device available for the advancement of their own public relations program and to aid in the promotion of National Pharmacy Week for 1958—October 5–11. A unique, colorful three-dimensional window display is being offered by the Committee on Public Relations of the AMERICAN PHARMACEUTICAL ASSOCIATION. The display will include changeable panels relating to other national health programs for use throughout the year.

In announcing the availability of the display, the committee disclosed elaborate plans for the 1958 promotion of National Pharmacy Week centered around the slogan:

"YOUR PHARMACIST WORKS FOR BETTER COMMUNITY HEALTH."

Each pharmacist is urged to use his own initiative in promoting the contributions which the profession makes to the health of the community. During National Pharmacy Week he can give particular attention to the appearance of his pharmacy and emphasize the services he is trained to provide. He is urged to speak before civic organizations about health subjects of current interest, and also to solicit the cooperation of leading business associates and administrative officers in the community. All these activities can be complemented by obtaining the support of local radio and television stations and newspapers. Public relations for the pharmaceutical profession depend to a large extent upon the support and cooperation of its practitioners.

The organization of National Pharmacy Week activities is being completed at the national, state, and local levels. The APhA, as in previous years, will provide a public relations kit containing materials which may be used on a year-round basis. It will solicit the cooperation of the pharmaceutical industry colleges of pharmacy, and state and local pharmaceutical associations.

Each state association is requested to obtain a proclamation from the governor and arrange for the appointment of special committees at the state and local levels to provide additional public relations material for use by their members. State pharmaceutical associations are also urged to arrange for newspaper, radio, and television publicity throughout their own state.

Window Display Contest

A window display contest will again be held in cooperation with the state pharmaceutical associations. Cash awards of $50, $100, and $200, as well as 15 plaques and certificates, will be presented to members of the APhA who submit winning entries. Presentation of the awards will be made at the annual convention to be held in Cincinnati next April. In addition, a certificate will be awarded to the winning entry from each state which participates in the display contest. Complete details concerning the rules of the contest will be mailed to over 55,000 retail and hospital pharmacies and the 76 colleges of pharmacy throughout the nation. The mailing will include a window streamer which must be used in each display in order to be eligible for competition.

Public Relations Kit

The public relations kit is being completely revised for use on a year-round basis. It will have three sections: (1) public addresses, (2) radio and television material, and (3) newspaper and miscellaneous aids.

The material for public addresses will be of two types—outline form and complete addresses. The outlines will provide facts about a given subject for the individual pharmacist who wishes to develop an address to suit his own needs. The complete addresses are designed for use essentially as written. Topics developed in the public address section concern health matters of current interest to the public.

The section containing radio and television material includes a new series of 10, 30, and 60-second spot announcements which stations will be willing to use as public service features. The section with newspaper and miscellaneous aids contains a newly-designed newspaper advertising mat.

The kits are available at a cost of $2.00. Orders should be directed to the Committee on Public Relations, American Pharmaceutical Association, 2215 Constitution Ave., N.W., Washington 7, D.C.

New Public Relations Display

The new public relations display shows a pharmacist in his prescription department with the background depicting the community he serves. The theme of the display is "Your Pharmacist Works for Better Community Health," and the Code of Ethics of the APhA is featured on a wing of the display.

In addition, a series of supplementary panels will be furnished from time to time suitable for other community health promotion events fostered by such organizations as the American Cancer Society, the American Heart Association, and others. The Committee of Public Relations anticipates that at least 4 supplementary panels will be supplied with each purchase.

The cooperation of all wholesale pharmaceutical salesmen is being arranged through the National Wholesale Druggists Association and the Federal Wholesale Druggists Association.

The cost of the display is $3.90 each, including supplementary panels and postage. Orders should be sent to the Committee on Public Relations, American Pharmaceutical Association, 2215 Constitution Avenue, N.W., Washington, D.C.

Not every pharmacist will have the time to prepare a display; not every pharmacist will have the time to prepare speeches; not every pharmacist will have the opportunity to obtain a proclamation from his mayor; but National Pharmacy Week provides an excellent opportunity for each pharmacist to demonstrate to his customers, friends, and neighbors that he *works for better community health.*

DISPLAY CONTEST RULES

National Pharmacy Week is always dedicated by the pharmacists of America to the advancement of medical care. With each passing year the observance of this special week has acquired greater significance.

Window displays have always been a prominent feature in supporting this national public relations effort for the profession. This year pharmacists are urged to participate to the greatest possible extent, using the window streamer and other material furnished by the AMERICAN PHARMACEUTICAL ASSOCIATION.

Please create your window display, have it photographed, and enter two glossy prints in the contest.

General

1. Competition is limited to members of the AMERICAN PHARMACEUTICAL ASSOCIATION. In instances where a photograph is entered in the name of a retail pharmacy rather than by an individual, a member of the AMERICAN PHARMACEUTICAL ASSOCIATION must be associated with the firm, either as an owner or as an employee, and must have had a part in the planning of the display.
2. Each display must exhibit the window strip entitled "National Pharmacy Week, October 5–11, 1958," which the AMERICAN PHARMACEUTICAL ASSOCIATION will supply.
3. Displays will be judged on the basis of:
   a. Value and effectiveness of the message to the public
   b. Originality
   c. Professional character, arrangement, and details
   d. Conformity to theme
4. Displays must be entirely professional in their concept. Any emphasis on commercial implications must be avoided.
5. Duplicate photographs submitted must be 8 by 10-inch glossy prints.
6. Pharmacy Week displays that have been entered in former years are ineligible.

Retail Pharmacies

1. General Rules 1 to 6 inclusive apply to this competition, which is limited to displays in retail pharmacies.
2. Duplicate photographs of displays must be submitted to the secretaries of the respective state pharmaceutical associations on or before November 15, 1958, labeled on the back as entries in the Retail Pharmacy Competition.
3. Each state pharmaceutical association should appoint a judging committee before November 15, 1958, to select the best display within the state. (Some states have provided a state prize for the best display and then entered the winner of the contest as their representative in the national competition.) Duplicate photographs of that display shall be mailed to the AMERICAN PHARMACEUTICAL ASSOCIATION, 2215 Constitution Avenue, N.W., Washington 7, D.C., not later than December 15, 1958. Entries mailed after that date will not be accepted in the national competition.
4. Only the winner from each state may be entered in the national competition. Each state winner will receive an appropriate certificate from the AMERICAN PHARMACEUTICAL ASSOCIATION.
5. As soon as possible after December 15, 1958, a national committee of judges will select the best six displays from the states. The winning displays will be awarded the following:
   a. $200 and plaque or other trophy
   b. $100 and plaque or other trophy
   c. $ 50 and plaque or other trophy
   d. } Certificates of merit
   e. }
   f. }

Public Exhibits

1. General Rules 1 to 6 inclusive apply to this competition.
2. Displays or exhibitx in the Public Exhibit Competition must be installed in a public place, other than a retail pharmacy, pharmacy college, or hospital, such as a bank, railroad station, air terminal, government building, etc. One entry may be submitted by any pharmacist or group of pharmacists, including hospital and retail pharmacists, state and local associations, schools of pharmacy, and local branches of the AMERICAN PHARMACEUTICAL ASSOCIATION.
3. Duplicate photographs of displays shall be mailed to the AMERICAN PHARMACEUTICAL ASSOCIATION, 2215 Constitution Avenue, N.W., Washington 7, D.C., on or before December 15, 1958. Entries mailed after that date will not be accepted in the competition.
4. As soon as possible after December 15, 1958, a national committee of judges will select the best three public exhibit entries. The best display in this group will receive the AMERICAN PHARMACEUTICAL ASSOCIATION Award, which shall be a suitable trophy, and the others will receive certificates of merit.

Pharmacy Colleges

1. General Rules 1 to 6 inclusive apply to the Pharmacy College Competition, which is limited to displays or exhibits planned and installed by pharmacy students at their college or university.
2. Only one entry from each college may be submitted.
3. Duplicate photographs of displays shall be mailed to the AMERICAN PHARMACEUTICAL ASSOCIATION, 2215 Constitution Avenue, N.W., Washington 7, D.C., on or before December 15, 1958. Entries mailed after that date will not be accepted in the competition.
4. As soon as possible after December 15, 1958, a national committee of judges will select the best three displays from the colleges. The best display in this group will receive the AMERICAN PHARMACEUTICAL ASSOCIATION Award, which shall be a suitable trophy, and the others will receive certificates of merit.

Hospitals and Clinics

1. General Rules 1 to 6 inclusive apply to the Hospitals and Clinics Competition, which is limited to displays or exhibits planned and installed in hospital or clinic lobbies or other hospital or clinic areas open to the general public.
2. The entry must be submitted in the name of the hospital or clinic by the hospital administrator and chief pharmacist jointly.
3. Only one entry from each hospital or clinic may be submitted.
4. Duplicate photographs of displays must be mailed to the AMERICAN PHARMACEUTICAL ASSOCIATION, 2215 Constitution Avenue, N.W., Washington 7, D.C., on or before December 15, 1958. Entries mailed after that date will not be accepted in the competition.
5. As soon as possible after December 15, 1958, a national committee of judges will meet to select the best three exhibits in this group. The best exhibit will receive a plaque suitable for hanging in a prominent place in the hospital or clinic, and the other two will receive certificates of merit.

ORDER FORM

For Participation in National Pharmacy Week October 5–11, 1958

Pharmacists are invited to take part in the observance of National Pharmacy Week, October 5–11, 1958, through the active use of the aids that have been prepared for them. A collection of the first thirteen (13) items will be supplied in kit form for $2.00. Other items listed below are available at the price indicated. The minimum order is 60¢. Use coupon at bottom of page for ordering.

PUBLIC ADDRESSES

(These addresses are 10 to 15 minutes in length and suitable for groups indicated. Some are complete addresses and others are in outline form. A number of facts given in the outlines may be suitably adapted to radio, television and newspaper use.)

1. What You (the layman) Should Know About Drugs (all groups).
2. A Day with Your Community Pharmacist (all groups).
3. The Myth About the High Cost of Drugs (all groups).
4. Pharmacy as a Career (student groups).

RADIO AND TELEVISION MATERIAL

5. Spot Announcements (contains a series of 21 entirely new 10-, 30-, and 60-second spot announcements).
6. The Search for New Drugs (a revised 15-minute radio or television interview).
7. A Visit with Your Pharmacist (a revised 5-minute radio or television interview).
8. A Series of Additional Television or Radio Scripts.

NEWSPAPER AND MISCELLANEOUS MATERIAL

9. Two Newspaper Ad Mats.
10. Suggested Proclamations for Use by Governors and Mayors.
11. Suggested Editorials for Newspaper Use.
12. The Pharmaceutical Story (a booklet developed by the Health News Institute).
13. National Pharmacy Week Display Suggestions, Window Strip, and Contest Rules.

OTHER ITEMS AVAILABLE

(NOT INCLUDED IN KIT)

14. Public Relations Display, with additional supplements to be provided from time to time throughout the year, $3.90 including supplements.
15. Facts About Pharmacy and Pharmaceuticals (a book developed by the Health News Institute), 45¢.
16. Drugs Mentioned in the Bible (an address suitable for church groups and women's clubs), 20¢.
17. The Pharmacist's Show Globe (an address suitable for all groups), 20¢.
18. Pharmacy—Ancient and Modern (an address suitable for historical societies, service clubs, and library groups), 20¢.
19. Pharmacy's Many Facets (an address suitable for all groups), 20¢.
20. APhA Code of Ethics, 10″ by 16″ in 3 colors, on heavy stock for framing, $1.00 postpaid.
21. APhA Code of Ethics 12″ by 16″, in 3 colors, on laminated board, "easled" for counter display, "ringed" for hanging, $2.50 postpaid.
22. APhA Code of Ethics, leaflet, single copy free; 2 to 500 copies, 1¢ each; 500 to 1,000 copies, 10% discount; over 1,000 copies, 15% discount.

DETACH AND MAIL

I enclose $_____ for the items encircled below. (Remittance must accompany order; postage stamps are acceptable.)

14 15 16 17 18 19 20 21 22

Kit @ $2.00

Name _____

Street _____

City _____

Mail to: **Committee on Public Relations** AMERICAN PHARMACEUTICAL ASSOCIATION

2215 Constitution Avenue, N.W., Washington 7, D.C.

Health resources and problems including those of

pharmacy in alaska

The need for professional personnel in the health field in Alaska is acute and this need is certain to become more urgent now that this territory has become the largest State of our Nation. Conversion of the last pioneering territory of the U.S. into the 49th State will undoubtedly open up vast new opportunities for those pharmacists, physicians, nurses, and other health personnel who enjoy frontier life, with ample opportunities for hiking, mountain climbing, hunting, fishing, and winter sports.

The growth of Alaska's population in recent years is indicated by the fact that the total number of reports from the Bureau of Vital Statistics of Alaska doubled during the last decade and the population more than doubled. The comparatively small number of pharmacies now found in Alaska will have to be enlarged and new ones will have to be built if the predicted boom materializes.

Alaska as a land of opportunity for personnel in the health field, is characterized by vast areas of rugged terrain, majestic mountains, cold winters in the interior (to −70°), relatively mild winters in the southeast along the coast (sometimes no snow after the first week in January), continual daylight in the summertime and a comparatively small young population (average age 26). Modern conveniences are found in only a handful of larger towns and cities. For the most part communities are widely scattered and isolated. Although Alaska stretches 2,500 miles in one direction and 1,500 in the other, with a 3,000-mile coastline, it contains only 210,000 people, less than that of Long Beach, California, or of Miami, Florida.

The population includes about 34,000 natives (Eskimos, Indians, and Aleuts), and nearly 50,000 members of the Armed Forces and their dependents. The white civilians live mostly around the larger towns and cities, while the natives live mostly in small isolated villages. The native population has remained practically unchanged in total count since the territory was purchased from Russia in 1867, an indication of neglect and exploitation of the natives.

Poor transportation and communication over tremendous distances, one of Alaska's biggest problems, makes the distribution of medical supplies and health information and services very difficult. Major contact with the outside world is by air. In fact the airport at Anchorage is claimed to be the third busiest airport in the world after New York City and Chicago. Although contact is available by boat along the seacoast there is only one railroad, running from Seward to Fairbanks, and none into adjoining territory. There is only one highway from Alaska to the "outside," the Alcan Highway through Alberta to Great Falls, Montana, or British Columbia to Seattle, Washington. Importing of pharmaceutical supplies is expensive because there is very little shipment to pay for the return trips of boats between the United States and the territory.

The cost of living is much higher in Alaska than in the U.S. (housing costs range from 33% higher in Ketchikan to 83% higher in Fairbanks; food from 22% higher in Ketchikan to 65% higher in Nome; and clothing from 12 higher in Ketchikan to 24% higher in Seward). Nevertheless, there are advantages in the form of high private incomes and special salary allowances in some agencies. Also the adventuresome life appeals to many. The experience and the challenges faced by practitioners in small isolated communities can rarely be found in any other part of the country.[1,2,3,4,5]

The Editor is indebted to a large number of persons for information contained in this article. Verbal and written communications have been received from Charles R. Hayman, M.D., Commissioner of Health for Alaska, January 1956 to December 1957; Pharmacist Director Allen J. Brands, Chief Pharmacy Officer, Division of Indian Health, Public Health Service; Dr. W. G. Brandstadt, Assistant Editor of *The Journal of The American Medical Association;* Mrs. Gladys M. Rafter, Alaska Area Assistant, Department of the Interior; George Griffenhagen, Curator, Division of Medical Sciences, Smithsonian Institution; and many others. Photographs were supplied by Allen Brands and *Washington Daily News.*

1 U.S. Dept. of the Interior, *"Mid-Century Alaska,* U.S. Government Printing Office (1957).

2 U.S. Dept. of the Interior, *Annual Report, The Governor of Alaska* (1957).

3 U.S. Dept. of the Interior, Bureau of Labor Statistics, *The Status of Labor in Puerto Rico, Alaska, Hawaii* (1955).

4 "Medical Conditions in Alaska," *J. Am. Med. Assoc.,* **135,** 500–510 (1947).

5 "Alaska's Health," The Graduate School of Public Health, University of Pittsburgh (1954).

6 *Hayes Druggists' Directory* (1958).

Pharmaceutical Service

In 1893, C. E. Coon, who had established a pharmacy in Alaska 8 years earlier, wrote an article to the Editor of *The Pharamaceutical Era* to acquaint pharmacists of the United States with the "vast territory" to the North. Coon observed:

"The little town of Juneau, in which I live, was established in 1881. . . The town now has substantial business houses, dwellings and churches, and a hospital that would be a credit to a town of 10,000 inhabitants, under the supervision of the Sisters of St. Ann, with skilled nurses and an efficient physician. It has one newspaper, *The Juneau City Mining Record,* established in 1888. . . I established myself here in 1885. . . I am centrally located, building 25 × 100 ft., on a corner lot. . . I am doing a good business and carry about a $6,000 stock; prescription files show over 10,700, a great many having been refilled several times. The prevailing disease here is syphilis. . ."

In 1894, just over a decade later, there were five pharmacists in Juneau (population 1,235); two in Sitka (population 292); and one in Douglas (population 300). The first members of the AMERICAN PHARMACEUTICAL ASSOCIATION from Alaska joined in 1909. They were Guy L. Smith, Proprietor of Guy's Store, opposite the post office in Douglas; and Floyd E. Ryus, of Ketchikan, Alaska.

There are now 42 pharmacies[6] (1 per 5,000 population) and several hospital pharmacies being operated in 15 cities and towns in Alaska. They resemble the drugstores and professional pharmacies found in the other 48 states. The number is constantly expanding as the population of Alaska grows. Some indications of this growth are shown by the current populations of the towns mentioned by Coon in 1893: Juneau (7,100), Sitka (4,000), and Douglas (700). Populations of other rapidly growing cities are: Anchorage (94,500),

Fairbanks (55,000), Ketchikan (8,000), and Nome (2,000).

The Pharmacy Act

The Alaska Territorial Board of Pharmacy was created on April 26, 1913, when the first Alaska Pharmacy Act was approved. The current Pharmacy Act, which has evolved gradually from the original, has some interesting clauses. For example, it defines drug and medical supplies as follows:

"Drug" or "drugs" means drugs or medical supplies which contain poisonous, potent, habit-forming or deleterious ingredients, or medicines containing ingredients which may be considered dangerous or harmful if taken in overdose.

"Medical supplies" means items for the cure or treatment of disease or injury which do not require prescription by a physician and which do not contain poisonous, potent, habit-forming or deleterious ingredients, or any ingredient, or ingredients, which may be considered dangerous or harmful if taken in overdose.

Eligibility for registration is set forth in the Act as follows:

An applicant for registration as a pharmacist shall be at least twenty-one years of age, a citizen of the United States and fluent in the reading, writing and speaking of the English language; shall furnish the Board with affidavits from not less than two reputable citizens of the United States attesting to his good moral character and freedom from addiction to the use of drugs or alcoholic liquors; shall be a graduate of a recognized college of pharmacy. . .

An applicant otherwise qualified may be registered as a pharmacist without examination by reciprocity through the National Association of Boards of Pharmacy.

The Act also provides for temporary registration for a period of 3 months "upon written or oral examination before any member of the Board and certification by said member to the Secretary of the Board, that each applicant is competent to receive the temporary license. . ."

The dependence placed upon pharmacists in some of the more isolated areas is shown by the following paragraph in the Act:

In communities which have only one licensed pharmacy or drug store, it shall be the responsibility of the owner of such pharmacy or drug store to have a licensed pharmacist on duty, or on call, at all times.

The section on Restrictions on Sale of Drugs is particularly interesting in view of some of the recent controversies in the United States.

No mechanical devices or bending (vending) machine, whether located on premises subject to regulation by this Act or elsewhere shall be used to dispense drugs, medicines, or preparations containing poisons.

Stores and roadhouses, at a distance of at least 3 miles from the location of a licensed pharmacy shall be authorized to handle and sell non-poisonous patent medicines, remedies for horses, dogs and other domestic birds and animals, and household remedies and surgical dressings; provided that such medicines, remedies, and surgical dressings are still in their original packages and are properly and clearly labeled.

Hospitals and clinics, when dispensing for out-patient treatment, shall have a licensed pharmacist in charge of such dispensary, except that compounding and dispensing of prescriptions in such dispensary may be done by, or under the supervision of the prescribing physician or surgeon.[7]

Health Personnel

According to the 1958 edition of the *Directory* of the American Medical Association now in press there are 101 physicians in Alaska, 1 less than for the previous year. These include the following Board-certified specialists: 3 ophthalmologists, 1 of whom is also an otolaryngologist; 2 orthopedists; 1 pediatrician; 5 specialists in preventive medicine; 2 neuropsychiatrists; 1 general surgeon; and 1 thoracic surgeon.

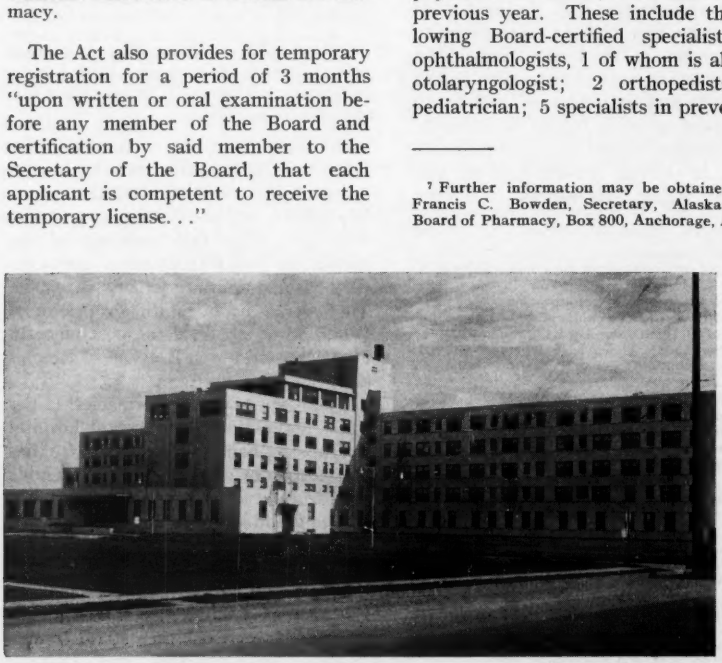
There are only 51 dentists and some 70 pharmacists in the entire state of Alaska. Registered nurses total less than 600, of whom nearly half are either retired or engaged in fields other than nursing. There are only about 40 Public Health Service nurses, very few private nurses, and a few practical nurses.

The members of the Armed Services stationed in Alaska have their own personnel to supply medical care for such installations as Elmendorf, Ladd, and Eielson Air Force Bases, the U.S. Army's Fort Richardson, and the Kodiak Naval Base. The prime responsibility for medical service in Alaska rests with the Air Force. There are roughly 80 military physicians on duty with the Air Force, and only 1 Medical Service Corps officer from the Army.

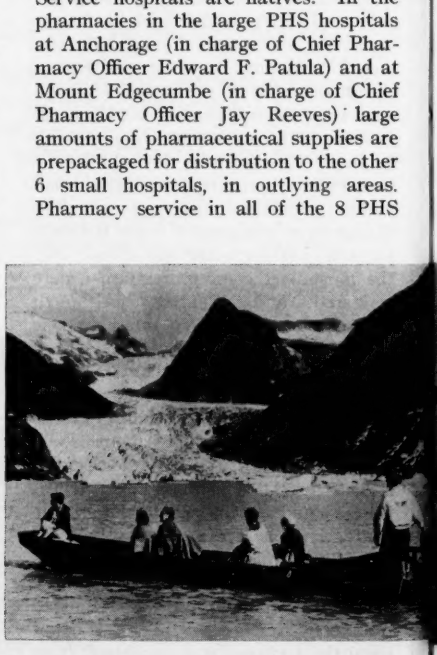
Registered pharmacists are in charge of the dispensaries of the three hospital installations at Eielson, Elmendorf, and Ladd, operated by the Alaskan Air Command. There is also a Pharmacy Officer on duty as Chief Administrative Assistant in the Office of the Surgeon General, and there is a Pharmacy Officer associated with the Arctic Research Laboratories at Barrow, administered by the University of Alaska for the Office of Naval Research.

The United States Public Health Service has about 1,100 employees in the 8 Alaska Native Health Service hospitals of the State including registered nurses and some 80 physicians. About 60% of these employees in the 8 Health Service hospitals are natives. In the pharmacies in the large PHS hospitals at Anchorage (in charge of Chief Pharmacy Officer Edward F. Patula) and at Mount Edgecumbe (in charge of Chief Pharmacy Officer Jay Reeves) large amounts of pharmaceutical supplies are prepackaged for distribution to the other 6 small hospitals, in outlying areas. Pharmacy service in all of the 8 PHS

[7] Further information may be obtained from Francis C. Bowden, Secretary, Alaska State Board of Pharmacy, Box 800, Anchorage, Alaska.



The entrance to the pharmacy in the large 406-bed Alaska Native Health Service Hospital at Anchorage, Alaska is shown above. A majority of the patients are active cases of tuberculosis.



Glaciers, towering mountains, and wild game can be seen on fascinating boat trips on Alaska's magnificent rivers.

hospitals in Alaska is the responsibility of the Area Pharmacy Officer, Albert B. Ripley, who flies repeatedly throughout the State checking constantly on the pharmacy service at each installation.

All of these pharmacists, members of the APhA, are typical of those who enjoy their life in Alaska. Albert Ripley was married just before he went to Alaska in 1953, has a young baby that was born there and enjoys every minute of his work as Staff Consultant to the Public Health Service Medical Staff and his trips by air throughout the State. Many of the hospitals he visits are in the permafrost zone, with ground frozen all year round as deep as 900 feet. Two of the hospitals, at Nome and Barrow, are above the Arctic Circle. Ripley also works part time in the hospital pharmacy at Anchorage with Edward Patula, a young, unmarried, enthusiastic pharmacist, 23 years old. Jay Reeves has just replaced Hugh Cabot as Chief of Pharmacy Service. Reeves also was married just before leaving the University of Arizona at Tucson to go North. Hugh Cabot, after spending 2 years in Alaska has returned to the University of Colorado for graduate work in Hospital Pharmacy Administration on a scholarship. These APhA members and others like them enjoy the challenges of Alaska.

Those hospitals which are not part of the PHS are supported by Catholic and other religious groups. Typical of the pharmacy service provided in these hospitals is that found in St. Joseph's Hospital at Fairbanks, administered by Sister Stanislaus, another very active APhA member.

Health Program and Facilities

The Government of Alaska, through its agency the Alaska Department of Health, and the Federal Government, through the United States Public Health Service, cooperate in preventing disease and in providing health services and facilities to the people in Alaska. The Governor of Alaska, currently the Honorable Michael A. Stepovitch, appoints a Board of Health (5 members, 1 from each judicial district and 1 from the Territory-at-Large) to supervise the Alaska Department of Health. A Commissioner of Health is appointed by the Board to serve as the Executive Officer of the Department.

Bacteriological analyses of milk and water, serological tests on blood and blood typing, examination of specimens for tuberculosis, venereal diseases, and other diseases are performed as services by 4 main laboratories of the Department at Juneau, Ketchikan, Anchorage, and Fairbanks. There is also a small laboratory on the *M/S Hygiene*, a Marine Unit which operates along Alaska's coast, as far north as Unalakleet. Services offered aboard this boat include maternal and child hygiene, tuberculosis control, communicable and venereal disease control, care of crippled and handicapped children, nursing care, and dental care.

Public Health nursing service is provided throughout Alaska to the extent of available personnel for expectant mothers, infants, pre-school, school, and crippled children, and for communicable disease, tuberculosis, venereal disease, mental hygiene, and morbidity cases.

In each community, or area, where Public Health nursing service is provided a community health council is composed of interested local citizens. All health centers are maintained by the local communities. All public health nursing services are supported jointly by the Alaska Department of Health and the community or area to which a nurse is assigned. Currently Public Health nurses are assigned to some 30 health centers. A total of 113 villages in remote areas are reached by means of nursing services on an itinerant basis.

Other services supplied by the Health Department include sanitation and engineering, health education, medical facilities, medical social services, and the keeping of vital statistics. Compilation of reports of births, deaths, stillbirths, and marriages from the widely scattered and isolated villages presents a major problem.

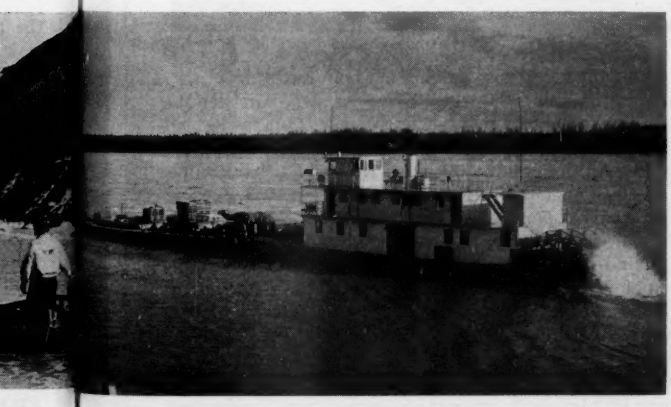
There are 27 hospitals with a total of 1,800 beds in Alaska, ranging in size from the 5-bed Seldovia General Hospital and the 6-bed St. George Island Hospital to the two large Alaska Native Health Service Hospitals in Anchorage (406 beds) and Mount Edgecumbe (340 beds). A total of 8 hospitals are reserved exclusively for the natives, representing more than 1,000 beds, nearly 60% of those available in Alaska.

Most of the native beds are occupied by tuberculosis patients. In fact, because of a shortage at times, beds for these patients have been borrowed in Seattle.

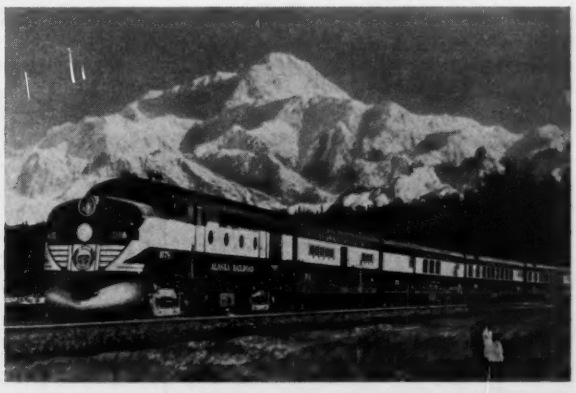
The first permanent Federal hospital for natives was opened at Juneau in 1915, just 3 years after the Public Health Service first began caring for them. Between 1931 and 1955 health services were provided for these natives by the Bureau of Indian Affairs and at the end of that time 2 large and 6 small hospitals were in operation. Since July 1, 1955, the Alaska Native Health Service of the Public Health Service has been responsible for these native hospitals and their health programs.

The hospital closest to the North Pole is located at permafrozen Barrow (page 484). Drinking water for the Barrow hospital is supplied by melting blocks of ice cut from a nearby lake. Only 1 trip a year can be made by the supply vessel for the hospital at Barrow. The remainder of the year supplies are received by air.

More civilian hospital beds are urgently needed in Alaska and some hospitals need rebuilding. There are very few convalescent and nursing homes, and about 30% of the patients go outside by air, mostly to Seattle, for care. Some relief is in sight, however.



The river boat "Yutana" with its paddle-wheel turning vigorously pushes a barge loaded with supplies on the Yukon River near Tanana, Alaska.



A modern diesel streamliner cruises along as the passengers on the Alaska Railroad see awe-inspiring 20,300-ft. Mt. McKinley, highest peak in N. A.

A 400-bed hospital, now under construction, will supply 200 beds by 1960.

There is no mental hospital for civilians. For more than 50 years the mentally ill have been the responsibility of the Department of the Interior. now, effective February 23, 1957, this responsibility was transferred to the Alaska Department of Health by Act of Congress. The mentally ill (now numbering about 380) are cared for at Morningside Hospital, Portland, Oregon. Now new plans, under a bill which became effective July 1, 1957, by Proclamation of the Governor, will result in facilities and mental health programs in Alaska itself.

Facilities for the education of health personnel are practically non-existent. There is no medical school, pharmacy college, or nursing school. Very little biological instruction is available at the University of Alaska (total student body about 750), where emphasis is placed on engineering, wild life management, and geophysics. Graduate study leading to the Ph.D. is available in geophysics. The master's degree is given in arts and education. Provision is also made for such advanced work in cooperation with universities in the Western States. There is a school for practical nurses which trains a small number each year.

There is a poison control center on a 24-hour basis, located at Fairbanks. It was started and is operated by an energetic pharmacist, Mrs. Anna Barrigan of Northward Drug, who works closely with the hospitals and physicians there.

Health Problems

Disease was brought to the Alaskan natives by Russian pioneers 200 yrs. ago.

Tuberculosis is the most urgent health problem faced by the State of Alaska. The death rate from this disease is one of the highest in the world. According to reports of physicians sent by the American Medical Association at various times the total number of cases of open pulmonary tuberculosis has reached approximately 4,500 or more with an incidence in some villages as high as 25% of the popu'ation of the village plus another 35% with arrested tuberculosis. Over half the cases discovered were unrecognized until death.

Tuberculosis has accounted for 20% of the mortality in Alaska and of all deaths due to communicable disease more than two-thirds of all such deaths have been due to tuberculosis. In one community about 55% of all deaths were due to the disease.

The infant mortality, because of widespread exposure to the organism causing tuberculosis, is extremely high. About one-half of the children born in one village died before they were 6 years of age. In another village, of a class of 30 that entered school only 8 lived to graduate. The average age at time of death is 39, compared with 60, for the general population. The death rate of the natives from tuberculosis is 25 times that of the nation's population as a whole. One out of every 30 natives is under treatment for TB.

Up to the Spring of 1945 no sanitorium for the treatment of tuberculosis existed in Alaska, although the housing in the native villages is very poor with as many as 12 persons found living in a single room 9 × 12 ft. Open cases of tuberculosis are seen in patients housed in these small, crowded quarters.

The United States, realizing the hazard to the military defense of Alaska, has in recent years intensified its efforts there in the health fields. The tuberculosis load has decreased somewhat because of better isolation, improved nutrition and general living conditions, the availability of more hospital beds, wider use of diagnostic X-ray equipment, the administration of the newer drugs (streptomycin, *p*-aminosalicylic acid, and isoniazid) to known tuberculosis patients awaiting hospitalization, and administration of BCG to tuberculin-negative children.

Another health problem is that of poor eyesight. Up to 50% of the native children in some villages exhibit corneal opacities, probably resulting from infections due to poor hygiene, poor medical facilities for early diagnosis, and lack of trained medical personnel who can provide proper care. Conjunctivitis, keratitis, and other diseases are common.

Venereal disease, particularly in the vicinity of military posts, has been a serious medical problem. Gonorrhea and syphilis have been almost impossible to control at times, because of the preponderance of male over female population, the acceptance of open prostitution in some towns, excessive use of alcohol, community indifference, and lack of funds.

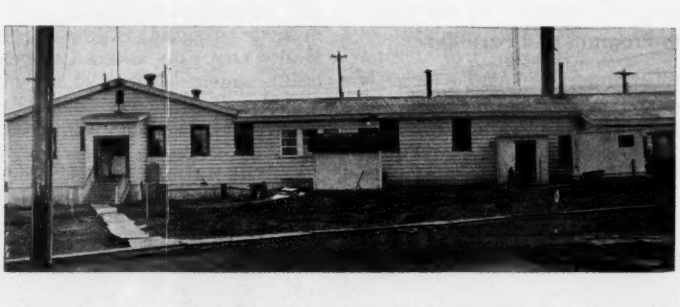
Substandard sanitation and housing facilities have contributed to epidemics of measles, diptheria, and influenza, as well as outbreaks of typhoid and enteric diseases. The problem of control of communicable and other diseases is intensified because most communities are isolated.

In many areas travel is extremely time-consuming and difficult because of poor roads and lack of public transportation. This makes it difficult for patients to reach hospitals or clinics and for Public Health nurses and other health personnel to provide preventive services to the natives and their communities and homes.

Frequently cases are diagnosed by radio and prescriptions made through this radio contact to many of the outlying villages.

The bush pilots make regular trips from the Alaska Native Health Service Hospitals to surrounding communities with small single-engined planes equipped with pontoons or wheels in the summer and with skis in the winter.

Other obstacles are wide-spread poverty, language difficulty, lack of health information and tribal customs, which conflict with healthful living. ■



AMONG OUR MODERN "49ERS"—those seeking not gold but to meet the challenge of service in our new 49th State—is Dr. Michael J. Halberstam. As first assignment he will tackle the task of operating the above 15-bed hospital at Barrow (1500 Eskimos and 75 whites), northernmost settlement on the Arctic Ocean, 500 miles NW of Fairbanks and NE of Nome, one of the toughest posts open to a young M.D. Once Barrow was a great whaling port. Now a single ship, the NORTH STAR, makes one annual stop in August. Nature relaxes only in July and August, when the ground permanently frozen 900 ft. deep thaws enough to allow a profusion of wildflowers to spring from the tundra. Priority problems include: obtaining water supply by melting stored blocks of ice; getting coal by caterpillar tractor from a mine 80 miles distant; keeping pace (assisted by 6 nurses, 1 dentist, and native help) with a heavy general practice among natives; getting seriously ill patients out by plane to Anchorage; getting supplies by flights 3 times weekly from Fairbanks.

The new Executive Vice President of the American Medical Association emphasizes the interdependence of Pharmacy and Medicine

Professional Togetherness

by | *F. J. L. Blasingame, M.D.**

MR. Chairman, Members, and Guests of the American Pharmaceutical Association: I am especially honored to meet with you so early in my new career. As you perhaps know, I began this full-time assignment in organizational work with the American Medical Association last January, after having been in the private practice of medicine for better than 20 years in the same small Texas community. Prior to going into practice, I had been a full-time teacher at the University of Texas, Medical Branch.

DR. F. J. L. BLASINGAME, Executive Vice President, American Medical Association, has spent many years teaching, organizing, and practicing medicine. He taught anatomy at the University of Texas 1932–35; interned in the Henry Ford Hospital, Detroit, 1935–36; and returned to teach at the University of Texas in 1936. Dr. Blasingame has held many important posts, including the presidency of State Board of Directors of the Blue Cross and Blue Shield of Texas and presidency of the State Medical Association of Texas. Also, he has been a member of the staff of Rugely and Blasingame Clinic Hospital, Wharton, Texas, since 1937.

Through the succeeding years, it has been my good fortune to serve in numerous capacities in organized medicine and to become conversant with its problems. I chronicle these items for you as background information for my subsequent remarks. I trust that the experiences which I have had—first hand, in teaching, organizational work, and practice—will equip me to behave intelligently in my present capacity.

One thing stands out: the professional medical team is essential. The rapid and dynamic growth of medical knowledge has been largely responsible. Its growth and application have become so widespread that no one group can encompass the field. Your profession is one of the basic components of this team.

With this phenomenal growth of medical knowledge and its increased effectiveness for all of modern society, problems between team members have become more complex; and the relationships between the team and the general population have gained in significance. In two general areas these changes are apparent: scientific and socio-economic.

* Address delivered beofre the Second General Session, APhA Los Angeles Convention May 24, 1958.

The American physicians recognize that they are a part of this team and are proud of this membership. Their 111-year-old parent organization, the AMA, is aware of this modern medical team and takes pride in participation in the public interest.

AMA Liaison with Pharmacy

Let me say in the beginning, within the over-all goal a necessary objective will be the development of close liaison with pharmacists, drug manufacturers, and all others who play a vital part in American medical progress. Also, the AMA is keeping in mind the basic concept of public service, always examining our program in this light. This point of view is the very *essence* of the professional status and must continue to receive increasing emphasis in the thinking of all members of the American health team.

AMA Developments

In this connection, I should like to point out that a number of timely developments are gradually unfolding within the organizational structure of the AMA which are designed to try to increase its effective service to the general public, the allied health groups, and the medical profession. I should like to

tell you a few of these developments; and I believe you will find them of interest to you, since they involve at various points pharmaceutical matters and professional relations. At other points the changes concern broader socio-economic problems affecting all of us on the modern medical team; indeed, affect all of the people whom we serve as a team.

At the AMA these changes may require more than just administrative and structural changes. It may call for a larger headquarters staff with a wide variety of talents from many fields. It may also mean stronger emphasis and changing methods in the conduct of our scientific activities, as we strive to provide leadership and coordination in the exciting times ahead.

For example, about three years ago our Council on Drugs modified its program. The seal of approval was discontinued, and major emphasis was shifted to evaluation and informational efforts designed to correlate new knowledge of drugs and therapy. This program, along with those of our other scientific councils, will be under constant study in the future. We shall at all times welcome the Pharmacy profession's views on how it can best serve the scientific interests of all concerned.

Recently the AMA established the American Medical Research Foundation to promote pure medical research wherever it can add to the sum total of scientific knowledge, and to conduct nonpartisan, competent studies in socio-economic subjects affecting medicine. Both aspects of that idea, scientific research and socio-economic problems, involve mutual interests.

An Association committee right now is studying ways and means of improving our annual and clinical sessions. This group is looking for the most effective methods of correlating scientific papers, films, television, and exhibits for the up-to-date presentation of new scientific knowledge. In this area, we shall appreciate your suggestions and cooperation with respect to pharmaceutical subjects.

Another new group—a joint, continuing committee of our House of Delegates and Board of Trustees—has begun work on a four-point objective. It has been directed to:

1. Redefine the central concept of AMA objectives and basic programs;
2. Consider the placing of greater emphasis on scientific activities;
3. Take the lead in creating more cohesion among national medical societies, and
4. Study socio-economic problems.

Just two weeks ago an important step was taken to help solve the problem of health care for the nation's senior citizens. The American Dental Association, the American Hospital Association, the American Nursing Home Association, and the American Medical Association announced the establishment of the Joint Council to Improve the Health Care of the Aged. Through intensified research and coordinated effort, the new council will work to identify and analyze the health needs of the aged; appraise available health resources for the aged, and develop programs to foster the best possible health care for the aged regardless of their economic status. You pharmacists, who are in day-by-day contact with this problem, can contribute in large measure to the achievement of those objectives.

Another project which I think may interest you is designed to improve communication between the AMA and its individual members. It will be a new bi-weekly, nonscientific periodical called *AMA News*, to begin publication in the near future. Aimed for quick, easy reading of timely organizational news and medical-economic-legislative developments, it will be sent every 2 weeks to all physicians. We hope that this publication will stimulate greater alertness and cohesion among physicians with respect to the social, medical-economic, and political trends of our times. And, for your profession, this publication will provide a new avenue of communication to let physicians know your actions and viewpoints on important issues. *Today's Health*, our magazine for laymen, is undergoing basic editorial revision designed to make this publication more effective and readable.

Interdependent Medicine and Pharmacy

So much for examples of AMA projects. I think you would agree that each of them, in one way or another, involves matters of mutual interest. Successful completion of these projects will require an ever-closer exchange of information and ideas between Medicine and Pharmacy. We are interdependent, as individual practitioners in our communities, and as organized groups on the local, state, and national levels. Close collaboration—what I should call "professional togetherness"—will serve not only our professional interests but also the public welfare.

On the organizational level our interdependence involves policy problems and national issues which cannot be resolved by individual physicians and pharmacists. Fortunately, I have had an opportunity to become familiar with many of those problems—as a member of the AMA Board of Trustees for the past 8 years and also as a member of several committees which have dealt with pharmaceutical matters. I hope that this experience will enable me to appreciate your viewpoint, as well as ours, to the end that I shall be helpful toward bringing about satisfactory solutions and to promote active recognition of our mutual interests.

We already have a friendly, working relationship, and I am sure that your officers share our desire to make liaison still closer and more effective in the future. The mechanism for that relationship is the Pharmacy Liaison Committee of the AMA Board of Trustees, and the National Pharmacy Committee on Relations with the Health Professions, which represents the American Pharmaceutical Association and the National Association of Retail Druggists. Those two groups met in February; and the subjects they discussed demonstrate the number and variety of our mutual interests.

Mutual Interests

For example, the joint committees agreed that the medical aspects of the Forand Bill are objectionable. This proposal would provide certain hospital, nursing home, and surgical benefits for Social Security beneficiaries who are receiving—or are eligible for—retirement and survivorship payments. It would open the door wide for the development of full-scale national compulsory health insurance, which ultimately would engulf all of us in the sea of government control.

Our two liaison groups were in general agreement on the need for devising acceptable alternatives, and the need for careful, long-range study of the medical care problems of the aged. As I reported earlier, the AMA since then has joined with 3 other national health-service organizations in forming a council to work toward those objectives.

Discussion of the federal government's Medicare program revealed that both the medical and pharmaceutical professions are dissatisfied with the present procedure whereby payments to pharmacists go through the physician. Both professions believe that under this program, government payment for drugs and pharmaceutical services should go directly to the dispensing agent.

The joint meeting, recalling some of the situations which arose in connection with the distribution of poliomyelitis vaccine and Asian influenza vaccine, spent considerable time on the problems of distributing drugs in scarce supply. The consensus was that state and local medical and pharmaceutical associations should be encouraged to organize sound, workable plans—ready in advance to handle such situations.

The same idea emerged in discussion of such topics as self-medication, physi-

cian-owned pharmacies, labeling of prescriptions with the names of ingredients, and professional supervision over the distribution of drugs through various channels. It was recognized that many of these matters can be solved most effectively by state and local associations. Great emphasis was placed upon early implementation of the program to organize joint committees of pharmacists and physicians at state and local levels.

So, we have many mutual interests; and our respective organizations have much liaison work to do on national, state, and local levels. However, the essential ingredient in all this is found not in organizations but in *individuals*. The foundation of our joint efforts must be professional collaboration between pharmacists and physicians in their home communities. The professional togetherness which we need more than ever before must arise from an atmosphere of mutual respect, cooperation, and concern for the ideals of public service—right in our home towns and neighborhoods.

As I mentioned early in my remarks, I spent 20 years in private practice. From that point of view also, I know how mutually dependent we are as members of the medical team. Whether the pharmacist practices his profession in a corner drug store, a hospital pharmacy or a clinic dispensary, he is a vital link in the chain of medical care. His skill and accuracy in following the physician's instructions are an extremely important factor in the team effort.

The physician must have confidence in the professional ability and integrity of the pharmacist. Likewise, the pharmacist must have confidence in the knowledge and competence of the physician—and certainly, if I may belabor an old joke, the pharmacist wants to be able to read the prescriptions. With their mutual scientific interest in pharmacology and related subjects, the two can learn from one another and help one another as professional men.

Professional Ideals

In thinking about this subject of professional collaboration, I recalled an excellent address delivered about a year and a half ago by the eminent scientist, Dr. Vannevar Bush. Speaking before the American College of Surgeons, and discussing the primary characteristic of a profession, Dr. Bush said:

"Without it, no group, no matter how scholarly it may be; no association, no matter what the titles of its members; no assembly of striking individuals, no matter what may be the depth of their culture, is truly entitled to the proud name of profession. From the earliest times, this primary characteristic has been the hallmark of professional men when such men have lived up to their high ideals. The members of a profession *minister to the people.*"

After pointing out that professional people minister with dignity, and advise and guide with pride, Dr. Bush went on to mention a corollary characteristic.

"The true members of a profession detach themselves from the mad scramble after this world's goods. . . When a man in the professions makes riches his primary goal, he ceases to belong to the profession in a true sense."

I think we should keep such ideals in mind as we strive for professional togetherness. As individual pharmacists and physicians, we must be honorable and truthful in dealing with one another and the public—in a professional relationship which emphasizes service rather than the pocketbook. If we think primarily in terms of the public welfare, the dollars will take care of themselves.

Over and above our professional interests, I strongly urge an active collaboration in community affairs and national issues. Along with nurses, hospitals, technicians, research workers, drug manufacturers, and many others, we are members of a medical team which has fluorished in an atmosphere of freedom and initiative. That way of life, however, is seriously threatened by the inroads of creeping socialism through big government. We have the additional obligation of standing together and helping our fellow citizens reverse that trend. Dr. Oliver Wendell Holmes wrote:

"One of the great things in this world is not so much where we stand as in what direction we are moving."

Symbols of Freedom

About 8 years ago nation-wide attention was attracted by an advertisement containing a picture of a small boy looking at 4 objects on a table. The objects were a door key, a Bible, a pencil, and a ballot. The headline said: "Will You Leave These To Your Children?" The door key meant protection against excessive government interference. The Bible was a symbol of our freedom to worship as we please. The pencil represented our right to speak or write what we think, regardless of government opinion. And the ballot offered us the privilege of choosing the kind of government we want.

Today, only 8 years later, those symbols are even more appropriate for all Americans. They are especially meaningful to professional people who are striving to preserve freedom in education, training, research, and professional practice. ■

Current Comment

Continued from page 468

Northern Masonic Jurisdiction, through the National Association for Mental Health, continues to provide treatment centers with important scientific information. Schizophrenia, the most widespread mental illness, accounts for 55% of all hospitalized mental patients.

The major drawback in care of the mentally ill is the severe shortage of nurses, psychiatric aids, social workers, and psychologists, as well as psychiatrists in the mental hospitals of this country. More than 63,000 new employees would be needed to bring these hospitals up to the minimum standards for adequate care and treatment of the mentally ill, according to a survey made last year by the NAMH and the American Psychiatric Association. The hospitals lack 80% of the nurses they need, almost 64% of the social workers, 55% of the physicians, 35% of the psychologists, and 24% of the psychiatric aids.

A great swell of public interest in mental health is sweeping the country, and new concepts are being developed constantly. Among the new approaches are the following:

1. We are beginning to see the therapeutic importance of keeping patients in the community instead of sending them off to an isolated hospital; many general hospitals are rapidly becoming places where patients with even the more severe mental illnesses can receive treatment and still maintain close ties with family and friends.
2. We are beginning to concern ourselves with providing additional services and separate facilities for mentally ill children, whose prevalence has heretofore been underestimated.
3. We are beginning to realize that the disturbed behavior of the mentally ill is often the result of restraint rather than of illness; we are beginning to value the open hospital—its doors without locks, its windows without bars.
4. We are beginning to treat certain patients in day hospitals and night hospitals rather than in round-the-clock institutions.
5. We are beginning to expect a high degree of cooperation between the psychiatric profession and the citizen in organizing new services for the mentally ill.
6. We are beginning to see that rehabilitation starts when the patient realizes he is sick and that it terminates only when he recovers and is fully reintegrated in the community; we are beginning to understand some of the psychological aspects of rehabilitation, too, particularly that patients need us, that they need our encouragement, and our acceptance and understanding. They need to know that we want to help them come back.
7. And we are more aware than ever that the volunteer is the lifeblood of the mental health movement, whether serving on the mental health association board or committee or in a hospital or information center or in a motor corps transporting patients or in a speakers' bureau or fund-raising campaign.

Opinions on cost of prescriptions and medical care were obtained in a survey of

physician-pharmacist relations

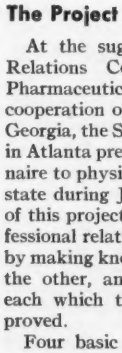
by | *Douglas Johnson, Ph.D., and Melvin A. Chambers, Ph.D.*

The Project

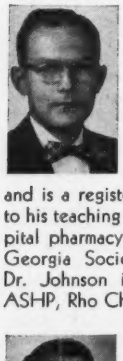
At the suggestion of the Professional Relations Committee of the Georgia Pharmaceutical Association, and with the cooperation of the Medical Association of Georgia, the Southern College of Pharmacy in Atlanta prepared and mailed a questionnaire to physicians and pharmacists of the state during January 1956. The purpose of this project was to promote better professional relations between the two groups by making known the opinions each held of the other, and by exposing practices of each which the other felt could be improved.

Four basic categories were covered in the questionnaire—cost of medication and medical care, prescription writing, pharmacy information service, and general professional relations. Remarks pertaining to other areas of contact were requested.

The interest shown by both professions was gratifying. Of 2,068 questionnaires mailed to physicians, 969 or 46.9% were returned. Of 1,289 mailed to pharmacists, 357 or 27.7% were returned. This gave an overall response of 39.5%. Approximately one-third added comments before returning the questionnaire.



DR. DOUGLAS JOHNSON, Professor of Pharmacology and Head of the Department of Biological Sciences, Southern College of Pharmacy, Atlanta, Georgia, received his B.S., M.S., and Ph.D. degrees at the University of Florida and is a registered pharmacist. In addition to his teaching duties, he has worked in hospital pharmacy and is Past President of the Georgia Society of Hospital Pharmacists. Dr. Johnson is a member of the APhA, ASHP, Rho Chi, Sigma Xi, and Kappa Psi.



DR. MELVIN A. CHAMBERS, Professional Services Manager, The Wm. S. Merrell Company, received his B.S. and PhD. degrees from Ohio State University and is a registered pharmacist. His background includes two years as Assistant Professor of Pharmacy at the University of Texas and two years as Research Assistant at the Oak Ridge Institute of Nuclear Studies. From 1952 to 1957, Dr. Chambers served as Dean of Southern College of Pharmacy, Atlanta. He is a member of APhA, ASHP, Rho Chi, Sigma Xi, and Phi Delta Chi. He has served as Chairman of District III, AACP and is a member of the Pharmaceutical Committee of the Medical Exhibitors Association.

The Results

Cost of Medication and Medical Care—Here the objectives were to obtain the opinion of each profession on the cost of the other's services and to discuss the problems which prices create in relations with the public.

Both groups rated the cost of services as reasonable. The breakdown was as follows:

	Physicians' Fees (rated by pharmacists	Prescription Prices (rated by physicians)
Reasonable	85.4%	76.8%
Too high	12.3%	22.9%
Too low	2.3%	0.3%

Among the physicians who felt that prescription prices are too high, there was general agreement that this was true for antibiotics, corticoids, and vitamins. This they tended to blame on the manufacturer, although some had observed pharmacists who failed to reduce prices when the manufacturer did.

A greater problem noted by the physicians is price discrepancies between drug stores which 68% said they observe at least occasionally. Discrepancies were more often noted on compounded prescriptions as compared to those not compounded and on nonprescription items which cut-rate stores sell much cheaper. Also, some drug stores apparently do not have consistent prices within the store.

Over half of the pharmacists said that customers occasionally complain to them about physicians' fees, and the physicians were questioned as to the reply they would prefer the pharmacist to make. Almost 90% requested that the patient be referred to the physician for discussion of the complaint. Several suggested that the pharmacist might justify the fee himself and that the physician could do the same for the pharmacist.

Both groups were questioned about the physicians' practice of quoting prescription prices to patients. Three-fourths of the physicians admitted that patients request such information at least occasionally, and two-thirds of the pharmacists thought that the physicians comply. If reasonable prices are quoted, 62% of the pharmacists thought the practice is helpful, especially when expensive medications are prescribed. Half observed that physicians usually quote correct prices, and another fourth felt that they are correct part of the time. Sixty-six per cent of the physicians said they discuss prices with a pharmacist, and others indicated that they get such information from manufacturer's representatives. Several commented that they have solved the problem of inaccurate price quoting by simply describing drug costs in general terms.

Prescription writing—The prescription is the professional link between physician and pharmacist. The professional activities of the pharmacist are dependent upon it, and he holds it in high esteem. For the physician, however, it is only a final step in his professional activities, and he sometimes slips into the habit of writing barely adequate prescriptions. Pharmacists were questioned about the prescriptions they receive in order to point out ways in which prescription writing can be improved.

Prescriptions are often incomplete! Over half of the pharmacists noted that items such as patient's name, patient's address, directions, or physician's registry number are often omitted. An additional 36% felt that such omissions occur occasionally. Perhaps most troublesome to the pharmacist is the omission of refill information, which 80% said occurs often. Although physicians are usually cooperative in supplying this information by tele-

phone (95% of pharmacists said they were), the delay involved for both is unnecessary and can be avoided.

Pharmacists report some difficulty in deciphering signatures. One-fourth said they have trouble often, and almost one-half said they have trouble occasionally. Undoubtedly the body of the prescription is executed just as poorly, but the pharmacist's familiarity with his stock aids him there. Incomplete and illegible prescriptions are the result of haste or carelessness. It would take only a little time and care to eliminate them.

Another problem in this area is the illegal telephoned prescription. Twenty-three per cent of pharmacists felt that physicians often expect them to break the law on this point, and 32% felt that physicians expect this occasionally. Many comments were received, of which the following is typical. "I do not believe the physicians are expecting us to break the law. I believe they are just unfamiliar with it and do not take it into consideration." An educational program carried on by pharmacists should produce great benefits in this situation.

Pharmacy Information Service—In recent years the practice of Pharmacy has changed. Compounding has declined and dispensing of ready-prepared products is now the rule. This has enormously increased the number of drug items available, and professionally-minded pharmacists have set themselves up as information sources on drug products.

Physicians were questioned to determine the extent to which they use this service. Ninety-five per cent said they do so from time to time. Further questioning revealed the types of information most frequently requested. These are tabulated below:

Availability of product	85%
Sizes marketed	79%
Price	67%
Dosage	36%
Poison information	15%
Drug indications, contraindications	10%
Other	6%

Many physicians suggested other information which they call upon the pharmacist to supply. These include:

Drugs prescribed by other physicians
Information from literature accompanying new drugs
Trade names of drugs, from the generic name or from a description of the drug
Contents of trade-named products
Compatibility
Spelling

The pharmacist should be able to supply all the types of information listed, and indeed 98% of the physicians said that they usually could. One physician commented that they often have to look up the information. This should not be objectionable as long as pharmacists maintain adequate references and know how to use them.

General Professional Relations—Questions in this section were included to expose practices of each profession which are unethical or which annoy the other.

Some pharmacists continue to refill prescriptions without physicians' authorizations. Nine per cent of physicians have trouble with this often, and 28% have trouble occasionally. Several physicians noted that this difficulty usually occurs with only a few stores in an area. Considering the number of prescriptions which lack refill information, it is not surprising that a few cannot resist the temptation to be of service.

Some pharmacists continue to sell prescription items over the counter, although this apparently is not entirely their fault. Forty-three per cent of physicians felt that such sales occur occasionally or oftener. On the other hand, 72% of pharmacists felt that physicians recommend over-the-counter purchases to patients occasionally. But while physicians contribute to this practice, they cannot be blamed for it. Physicians commented that this is a grave problem in some areas where they say some pharmacists are carrying on the equivalent of a good medical practice.

Some physicians continue to distribute original-labeled drug samples in an unfair manner. Among the pharmacists, 31% noted that this happens often, and 52% noted it occasionally. No pharmacist objects to sample distribution for the clinical evaluation of a new drug or for medically indigent patients. But when samples of established drugs are used by representatives to curry favor with the physicians, and when physicians subsequently distribute them freely, the pharmacists feel that this is very unfair and furthermore leads to requests for prescription items over the counter.

The lack of discussion of medication with the patient is a problem to both groups. A fourth of the pharmacists said that physicians fail to do this often, and almost half said they fail occasionally. The greatest problem seems to be failure to discuss the patient's condition with him. When the physician fails to do this, the patient asks the pharmacist. Considering the multiple uses of most drugs and his lack of a diagnosis, the pharmacist is not in a position to do this. And if he does answer, he is apt to create a difficult situation.

Only 20% of the physicians felt that such situations occur often, but when they do they can be serious. The following quotations cover typical situations. "On one occasion a pharmacist told a preacher that Pyridium which I had given him was good for chronic gonorrhea. At the same store another druggist told a highly nervous woman that Thorazine was given mostly for the insane. She really gave me a going over." "Only recently a druggist in a small town nearby told a customer that my Serpasil prescription was for mental cases. The lady called my office, told my assistants that she would never call again, and she has not. That suits me, but it was poor judgement on the part of the druggist."

The problem of physicians directing patients to certain favored stores continues. About half of the pharmacists felt that this happens occasionally or oftener, and 39% admitted that customers are directed to their stores. If the physician has a legitimate reason to believe that one store can fill his prescriptions better, then he has no alternative. A dermatologist commented that he has found it necessary to do this. But when the services of all drug stores are good, then patient-directing is unnecessary and may take an unfortunate turn with the patient. One physician said that he has been accused of receiving kickbacks on the basis of this.

In their comments, physicians noted several additional practices of pharmacists which are undesirable. Some pharmacists refuse to fill prescriptions which require compounding, saying that they are out of materials; some pharmacists reduce the amount of drug prescribed in order to get cash; some waste the physician's time by allowing lay clerks to answer the telephone and then failing to answer promptly themselves. A number of physicians and pharmacists both noted that there is excessive competition and poor relations between pharmacists.

The final item on the questionnaire was a question concerning emergency pharmacy service. Twenty per cent of the physicians said that such service is not adequate on nights and holidays. They felt that most pharmacists are willing to open up at night, but a number said that they are reluctant to call them out. One physician suggested that pharmacists in a town rotate the responsibility for emergency service and keep the physicians posted.

Recommendations

From the Georgia survey of physician-pharmacist relations, improvements most needed appear to be as follows:

1. Physicians need to write more complete prescriptions, especially with regard to refill information.
2. Physicians need to be informed of the legal restrictions on drug sales.
3. Pharmacists need to eliminate a number of unethical and illegal dispensing practices, and physicians should strive for fair sample distribution.
4. Physicians and pharmacists should work together to supply appropriate medical information to the public so that undesirable situations do not occur.
5. Pharmacists in each locality need to work out a convenient emergency service program to serve the needs of the community.

Such improvements as these will not automatically follow publication here; they will result only from the combined efforts of both professions. On the local level, these efforts might take the form of regular joint meetings of the county medical association and the local drug clubs at which problems could be worked out in a friendly manner. The initial meeting might consist of a discussion of the problems reported here and an analysis of the local picture. With the local situation clearly in mind, grievances can be worked out, and the proper educational programs can be inaugurated.

On a national level, joint activities might be turned to the development of an interprofessional code of ethics to supplement the individual codes to which the two professions subscribe.

For physicians and pharmacists, these are projects for their mutual benefit.

Abbott Laboratories' continuing national prescription survey reveals new

prescription trends

by | *David Stiles**

During the business recession that began in the last quarter of 1957, prescription sales reached a new all-time high, and total sales for the year exceeded $1,800,000,000.

There are a number of factors that help to explain this significant upward trend in the prescription market even during a period of slackening general business activity. The increase in respiratory ailments, particularly the "flu," advanced prescription sales in the last quarter. But there also were other, more significant long-range influences.

Reasons for Rx Growth

Contributing greatly to the expanded prescription market is the increaing number of prescriptions filled per capita. Today, for example, 3.5 prescriptions are being filled per capita compared with less than 1.5 per capita in 1940. About 635 million prescriptions were filled last year, an increase of 237.8% over 1940.

One reason for this increase in prescriptions is, of course, the increase in population—about 30.5% in the last 17 years. Probably of greater importance is the change which has occurred in the characteristics of the population: the almost phenomenal growth in younger and older age groups. Births are up 46% over 1940, and the number of persons over 65 years of age has increased 63% during the same period. More prescriptions are written for these groups than for others.

The aroused interest of the public in health matters is an important factor in the market, too. The public has become more health conscious; certainly the rapid increase in the number of health columns in the daily press and popular magazines is an indication of this. The public, although it may dislike spending money for prescriptions, knows that the prescription is essential to good health. These are rather deeply instilled attitudes that do not seem to be affected greatly by ups and downs in the business cycle.

Accompanying this growing interest in health has been an increase in medical insurance enrollments from about 2% of the population in 1940 to about 43% in 1957. The number of persons enrolled in insurance programs of this type is rising steadily.

Also a factor in the growing prescription market is a decline in the number of physicians dispensing their drugs. In 1915 about 40% of physicians dispensed more than 50% of their drugs. This had declined to about 15% of physicians in 1953, although some have said there has been a slight increase during the past 2 years.

Probably the most important factor in the growing prescription market is the development of valuable new drugs that are more effective in treating disease than were older drugs or that treat diseases for which no drug formerly was available. In 1957, the pharmaceutical industry introduced 400 totally new products and nearly 100 new dosage forms of established products.

During 1957, the pharmaceutical industry spent *just on research*, 44.3% *more* than its total sales in 1940 of drugs used to fill prescriptions. This $127,000,000 research expenditure last year means more new products and, following trends over the last 17 years, an increased number of prescriptions per capita in the future and decreased longevity of all products.

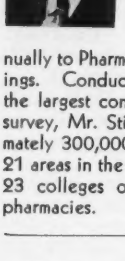
Trends in New Rx Products

The effect of new products on the prescription market is pointed up by an examination of the four leading groups of products. Cardiovascular drugs, corticoids, ataractics, and antibiotics account for 41.6% of the total dollar prescription market. Two of these groups, the corticoids and the ataractics are less than five years old, and, while the antibiotic group is about 12 years old, its greatest increase has occurred during the last 5 years.

Most successful prescription products today show a high frequency of prescriptions during the first 2 or 3 months after their introduction and reach a peak in the fifth to the seventh month. Some remain at this plateau for a few months or years, while others slowly rise or decline.

Prescription products reach obsolescence earlier than formerly. Of the 20 specialties that were added in 1956 to the group of products prescribed 10 or more times per 10,000 prescriptions, 18 were a year old or less and the other two were 2 years old or less. Among those prescribed 5 or more times per 10,000 prescriptions, 26% were 2 years old or less, 61% were 5 years old or less, and 81% were 10 years old or less.

In 1956, new products that were added to the group prescribed 5 or more times per 10,000 prescriptions were prescribed at the rate of $154,000,000. This is seven times the dollar volume of the 38 specialties



DAVID D. STILES began his career with Abbott Laboratories 43 years ago. Eleven years ago he left his position as Associate Director of Sales to organize and direct Abbott's market research activities. He averages 75 talks annually to Pharmacy groups discussing his findings. Conducting the first and probably the largest continuous national prescription survey, Mr. Stiles annually studies approximately 300,000 prescriptions gathered from 21 areas in the U.S. with the cooperation of 23 colleges of pharmacy and about 300 pharmacies.

* This paper was prepared during February, 1958 for presentation at the APhA Los Angeles Convention.

that dropped below this prescription frequency from the previous year.

Despite increased prescriptions and the new products introduced every year, the number of products prescribed at this rate has remained almost stationary during the last 6 years at 400. During the same period, the number of products prescribed at the rate of 10 or more per 10,000 prescriptions showed greater variation, yet only from 219 to 256.

Of the leading specialties in 1956 (those prescribed at the rate of 10 or more per 10,000 prescriptions), 173 accounted for 61% of the prescriptions and 66.6% of the dollar volume of all prescriptions. The 323 specialties prescribed 5 or more times per 10,000 prescriptions accounted for 72% of the prescriptions and 77.7% of the prescription dollar volume.

Trends in Rx Prices

These newer research drugs which are more efficient in prolonging life and alleviating suffering in many cases cost considerably more. The physician's changing over from the older, less expensive medication to the newer, more expensive drug, is increasing the dollar volume of the prescription business and the average price of prescriptions. The higher cost of new drugs and the increase of the number of prescriptions per capita from 1.43 in 1940 to 3.61 in 1957 has resulted in higher expenditures per capita for prescriptions: from $1.34 in 1940 to $10.40 in 1957. And this expenditure per capita would be much higher if those receiving free medication from clinics, industrials, and Government were eliminated.

These increased costs make it difficult for the public to believe statements that prescription costs have increased less than food, clothing, and other necessities. The head of a family of five, for example, notices this increase in drug prices. Using the average figures, his annual expenditure has increased from $6.00 or $7.00 a year in 1940 to about $55.00, and the average prescription price has doubled in the last 10 years.

Therefore, he is confused when he is informed through certain sources that drug prices have risen less than the prices of other necessities. The difficulty arises from the fact that in developing price trends these statisticians use products that have been on the market a long time. So to determine drug price trends, they use such drugs as aspirin, A.P.C., milk of magnesia, etc. They are correct in saying these have increased less in price than have food or clothing. But these older drugs are not representative of the trend of prescription drug prices.

Public Reaction

Persons in or related to the profession of Pharmacy also have contributed to the public's confusion about prescription prices by failing in many cases to provide correct and satisfying explanations of prescription prices. Too much talking has been concerned with the high priced prescriptions like the $10.00 and $15.00 ones which occur only about once in every 200 prescriptions. And there has never been a factual explanation of why about half of all prescriptions cost $2.00 or less yet others run into considerably more money. There have been very few attempts to explain at the point of sale why a particular prescription has a high price; it is human nature to remember this high price and to forget the prescriptions obtained at nominal prices. Erratic pricing is a factor, too, in the public confusion and is one which should be corrected within the pharmacies with the aid of associations and extension services of schools.

More important than proving that the price of drugs has risen less than the price of most necessities is selling the public on the life-saving and life-prolonging value of these new more expensive drugs. The public needs to know that some of the older drugs have advanced little in price (only a few cents over the past 8 years) and that penicillin is now priced at about 5% of what it was when it was first introduced. The public needs to know that many new drugs *are* high priced and that this brings up the average price. It needs to be asked what price it puts on its health. It should be pointed out that the newer research drugs of greater therapeutic efficiency cost more. For example, in the treatment of rheumatism, the average prescription price of the older sodium salicylate was $1.40, but the average prescription price of the more efficient, newer corticoid is $7.32.

A more vigorous public relations program can do much to clear up the public's confusion about the cost of drugs. That this is important is indicated by several recent surveys. A Gallup Poll showed that 71% of those surveyed thought they were paying excessive prices for prescriptions. In another survey, 91% answered in the affirmative the question "Do you think prescriptions are priced too high?" This question was later rephrased to avoid begging an affirmative answer, and the survey concluded that 19% thought prescription prices are too high. Although these surveys in themselves are confusing, it is obvious that there is a great need for better understanding of prescription prices on the part of the public.

Other Trends

Other trends within the pharmaceutical and allied professions also have presented problems. One of these has been the trend toward prescriptions for brand names. Despite efforts to influence physicians to write prescriptions for products under the generic name, and vocal protests by some physicians to the multiplicity of brand names, physicians continue to write more and more prescriptions for the brand names even where there is a choice.

Fewer and fewer prescriptions require compounding by the pharmacist. In 1945, pharmacists compounded about 25% of all prescriptions, but today only about 6% of the prescriptions require compounding by the pharmacist. The actual count of compounded prescriptions presently is probably about half of what it was in 1950, and during the same period the portion of total prescriptions requiring compounding has decreased by about 70%.

A Great New Era for Pharmacy

Many regard these trends as inimical to the best interests of Pharmacy. Some educators and pharmacists have feared that Pharmacy's prestige would decline with the decrease in compounding.

Upon analysis, however, the pharmacist's prestige is being enhanced rather than diminished. What these trends really mean is that manual labor is disappearing from the dispensing of drugs, just as it is decreasing in most areas, and that the pharmacist is becoming a professional information specialist—a consultant, if you wish—in the service of the physician and the patient.

A look at the relative increase in the number of prescriptions filled and the number of pharmacies or outlets for prescriptions since 1940 shows why the reduction in manual labor involved in dispensing prescriptions is such an important factor. While the number of prescriptions filled has gone up 237.8%, the number of drug stores has risen only 1.9% to the present 53,000. The number of pharmacists has increased more rapidly, showing a 22.2 % rise, but is still decidedly subnormal. This means that the number of prescriptions per pharmacy has gone up 205.6% during the last 17 years and the number of prescriptions per pharmacist has risen 176.1%.

Without a reduction in the amount of compounding, pharmacists obviously would have had quite a problem in trying to fill the greatly increased numbers of prescriptions presented to them.

The pharmacist's increasingly important role as an information specialist, too, may work for the best in the profession. Today's more effective—and more potent—drugs require more stringent efforts to protect the patient; this is one of the pharmacist's jobs—to point out to his customer the physician's directions for taking the drug; to make sure the customer understands the warnings or precautions that may appear on the label; and to answer any questions the customer may have about the medication. The pharmacist also may be of help to the physician by serving as a source of information on the newer drugs.

This role requires a larger fund of knowledge on the part of the pharmacist than ever before. Not only must he be able to compound, for there probably always will be some prescriptions that must be compounded, but he also must keep himself informed of a steadily increasing number of drugs, many of them more complex than their predecessors. The 5-year pharmacy course to become effective in all accredited schools of pharmacy in 1960 testifies to the pharmacist's need for more—not less—skill, training, education.

Apparently these trends in Pharmacy cannot be resisted successfully. They certainly do not mean the decline of Pharmacy's prestige. They may well mean the opening of a new greater era in the profession, if the inevitable is not only accepted but welcomed as an opportunity to be used for the advancement of Pharmacy. ■

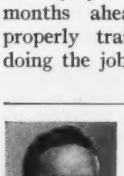
Good business is created by good

employee relations

by | *Charles D. Doerr**

THERE ARE three general areas of employee relations which, when tackled quickly and properly, will produce good business for retail druggists: (1) Proper training of both new and old employees, (2) effective motivation of employees, and (3) correction of employees' mistakes.

Let us examine the first area in employee relations that is troublesome—new employees who do everything wrong. They do not seem to do anything right. You have seen them at work—the kind that cannot find anything—or are inattentive—or irritate customers. Whose fauilt is it? Well, if the employee is young, you might say that he is "green"—not experienced. Maybe, but is he to blame? At the outset let us agree that a new employee is going to learn something. It may be the wrong way or the right way—the point is, it is our job as employers to see that he learns the right way. If that point of view is accepted, then it is our responsibility to see that our employees are trained properly. Do not evade it or put it off. Start training as soon as the new employee starts to work. The minutes you spend at the start in training an employee will save you hours in the months ahead. You know that a properly trained person generally is doing the job right. You do not have to waste time correcting mistakes caused by poor training or lack of training. You do not have to worry about costs rising because of waste or lost sales because of ignorance.



CHARLES D. DOERR, Vice President of McKesson & Robbins, Incorporated, was graduated from Dartmouth College in 1932. He is a member of the Board of Directors of McKesson & Robbins and also of the American Foundation for Pharmaceutical Education. Mr. Doerr is a Trustee of Columbia University's College of Pharmacy and a member of the Advisory Committee to the Division of Personnel Administration of the National Industrial Conference Board.

* Presented to the Section on Pharmaceutical Economics, APhA New York Convention, May 1, 1957.

Proper Training

Here is a successful formula for training that works practically everywhere. It is simple.

1. **Prepare the New Employee**
   - Put him at ease
   - Create interest
2. **Present the Job**
   - Tell him the key points
   - Show him what you expect
3. **Try the Employee Out**
   - Make sure he understands
   - Repeat instructions until he learns
4. **Follow Up**
   - Check up on his performance
   - Compliment him
   - Correct him

Prepare the New Employee

This is how it works. First of all, put your new employee at ease. One effective way to do this is to tell him you realize it will take him a while to learn. Point out that it took other people time, too. Tell him you do not expect perfection at first—that you want him to take plenty of time learning properly, rather than rushing and making a lot of mistakes. Tell him you will be more interested in how he is doing at the end of 5 weeks than how he is doing in 5 days.

Then create interest in the new job. Tell him how important it is, how his work fits in with the others in the store, and so forth.

Present the Job

Then you are ready to give him specific information about the job. You do this a step at a time. You demonstrate and explain one phase of a job before moving on to the next.

If a man does not get the idea right away, do not put him down as a numbskull. Did you make things clear? Really clear? Things often are clear to us because we know them but not clear to the other person. Did you feel the employee out until you found a way to explain the job in terms he could understand? Was your approach so careful that you found a common ground on which you could discuss the problem?

Did you make the mistake of assuming the employee knew something he did not? Did you expect him to understand things that would have confused you when you first came on the job? Be sure you have given the new employee a fair chance.

Try Him Out

Now you are ready to let him try out what you have taught him—to put to work all the things he learned by your explanations, your demonstrations, your questions and discussions. Do not be surprised if he shows nervousness when he reaches the application stage of learning. Many try so hard to please that they make mistakes. This sort of thing is easy to recognize and is something for which the new worker should not be criticized.

Let the new employee try and try again under your direction until he becomes perfect in each step of the thing he is learning. Helping him develop and maintain confidence is one of the biggest parts of your job. Watch for weak stops. Stop and ask questions. Then repeat your instructions until he learns. Encourage the employee to watch for his own mistakes. You watch for them, too, and show him what is causing them and how to avoid them. People usually can learn to do most things, once you get them to understand what you want done and how you want it done. Be sure it is not lack of understanding that is causing the trouble.

Follow up

The final step in the training procedure is the follow-up. Here you and the employee look over the results. Does the job he is doing meet all the specifications? Have him tell you where he thinks the job could be improved. Compliment him when he

does a good job. When necesssary correct him then and there. Do not let a bad habit or work procedure become permanent.

If all phases of your teaching job have been handled properly, the average new employee soon will be turning out work with skill and speed. You cannot forget about him, however, because there may be weaknesses in his training and learning that will not be apparent during his first weeks on the job. Only experience can give him the full confidence that he will need. You will have to follow up, and follow up regularly.

And do not forget there is much more to training than just teaching new employees and breaking them in. You have to keep looking for ways to improve; and you have to keep finding ways to improve your people—to get your people to cooperate in doing a constantly better job.

"If the learner has not learned,
the teacher has not taught."

Employee Motivation

The second area of employee relations that affects sales and profits is employee motivation. Let us apply this to the case of an older sales clerk who has lost interest in his job. He is not interested in modernizing his sales techniques. "Just give them what they ask for" is his motto. The problem with him is to build up interest and enthusiasm.

Now, admittedly, this building up of interest and enthusiasm is not as easy as all this. It may take much longer and be accompanied by a lot of hard work, but these are the elements:

1. Let the employee know how he is getting along.
2. Tell him why an improvement is necessary.
3. Give him credit for improvement when due.
4. Make the best use of his new ability at every opportunity.

First, let him know how he is getting along. He will not change or improve unless he knows what you expect of him.

Tell him why a change is necessary. Point out ways for him to improve. Help him to understand the need for a change in attitude—how it affects him and how it affects you.

When he does attempt to make a plus sale on his own initiative and is successful, he probably will be just as surprised and pleased with himself as you. This is the time to give him credit for it. Congratulate him then—tell him while "it is hot."

As he develops confidence in his new selling techniques, give him more opportunities. Give him the responsibility of handling a special promotion. Let him tell the other clerks all its selling points. If he shows ability, let him exercise it. His experience will be respected. Do not stand in his way once you have built up his interest and enthusiasm.

"People should be treated as
individuals."

Correcting Mistakes

The third area of employee relations that affects sales and profits is in the technique of correcting mistakes. Frankly, everybody makes mistakes—some are more serious than others. The important thing is that you develop a method of correcting mistakes—to minimize their effect and to prevent their recurrence. Three basic principles are:

1. See the mistake in terms of what causes it, not simply as wrong performance.
2. Causes of mistakes differ between individuals.
3. There is no standard solution.

Correcting mistakes presents you with an opportunity to gain the confidence, respect, good will, and able cooperation of the person whom you have to correct. It also presents the danger of losing good will and cooperation. The difference lies in the manner in which the correction is attempted.

Ordinarily, the person who makes a mistake feels worse about it than does his boss. He may, however, put up a bold front to hide his feelings and also to protect himself from penalties. Therefore, you can take either of two courses: you can assume that the person who made the mistake is careless or dull; or, you can assume that the employee is just as anxious as you are to do the right thing for his own well-being and satisfaction and for that of his employer. If you use the first assumption to criticize and blame, you do more harm than good. You irritate and antagonize your people. You lose their loyalty and willingness to cooperate. But if you use the second approach, you gain the appreciation and good will of people you have helped by discussing their mistakes with them in a manner which they themselves consider friendly and helpful.

Here is a technique for correcting mistakes. Adapt it to your own situations.

1. First of all, start with the right attitude. Admit that you make mistakes too. Assume that people want to do a good job unless you find out different. Show that you want to be fair.
2. Try to look behind the mistake—find out what causes it. Was it due to lack of information, lack of training or experience? The cause of the mistake determines the type of correction. And make sure that the fault is the employee's before you blame him.
3. Adapt your methods of correction to the individual. Know the personality and temperament of the employee.

Start your correction by commending the employee's good performance. Let him know that he is appreciated, and that you know he is just as eager to prevent mistakes as you are. He will strive even harder to make correction that will earn additional appreciation.

Make it easy for him to correct his mistake or to change his ways. This may mean instruction; or assignment of an experienced person to help him for a few days; or the chance to check up with you regularly for a few days; or moving him to an easier job until he makes the change. Promise reasonable rewards for change. It may be more responsibility, more recognition, and ultimately more pay. You decide what is appropriate.

Finally, take steps to prevent a recurrence of the mistake in the future. Make it easy for him to come back for further help as he begins to meet difficulty. If he fears to confess ignorance, he will "bull it through." The chances are he will make a similar mistake, not because he is careless, but because he is afraid to ask. When that happens you have failed to gain his confidence. That is an important supervisory mistake on your part. And teach, as well as tell. Show the employee how to meet similar situations where mistakes are likely to occur by showing how he can avoid mistakes by analytical thinking; help him to recognize causes of mistakes, to develop ways of remedying mistakes through alert and analytical thinking.

The causes of mistakes are: first, "I did not know"; second, "I did not think"; third, "I did not care." ■

SUMMARY

Good employee relations—and improved morale—only come by hard work. To gain improved morale and resultant more sales, select good workers and train them well. Make them feel that their ideas count and that they are important members of a team. Use corrective measures consistently and impartially. Encourage employee suggestions and act on them promptly. A big part of your managerial job as retailer is finding the right people, training them to do the things you want done, and keeping them enthusiastic and happy.

More and more retail drug store owners have come to realize how much their success depends on their employees.

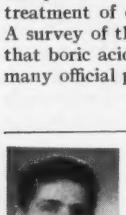
A selective review of

boric acid toxicity

by | *John J. Sciarra, Ph.D.**

SINCE 1882, boric acid has enjoyed official status in the USP[1]. During these 76 years, boric acid has gained widespread use as an antiseptic agent for local application to the skin and as an eye wash. It has also been used in the preparation of many buffered solutions. During the past several years boric acid has been the subject of adverse criticism. Unfortunately, several cases have been reported where death has been attributed to boric acid poisoning. As a result of this unfavorable publicity, the use of boric acid has been sharply curtailed. It is the purpose of this paper to review some of the literature on the subject of the toxicity as well as some of the reasons for the boric acid poisoning.

Boric acid is a commonly used medicinal. A dilute aqueous solution is used in the eye as a mild antiseptic. Externally, boric acid is employed in the form of a fine powder or as a 10% ointment in the treatment of certain types of dermatitis. A survey of the USP and the NF reveals that boric acid is used as a component of many official preparations.



DR. JOHN J. SCIARRA, Assistant Professor of Pharmaceutical Chemistry at St. John's University College of Pharmacy, is a Registered Pharmacist in Pa., N.Y., and Md. He received his B.S. degree in Pharmacy (1951) from St. John's University, his M.S. (1953) from Duquesne University, and his Ph.D. (1957) from the University of Maryland. Dr. Sciarra spent a year at the University of Michigan College of Pharmacy as a Teaching Fellow and a Fellow of the American Foundation for Pharmaceutical Education. He has twice received Honorable Mention in the Lunsford Richardson Pharmacy Awards for research dealing with boric acid.

It is of interest to recall that boric acid was introduced into medicine by Godlee[2] as a companion to Lister's use of carbolic acid just before the dawn of the bacterial era in medicine. Boric acid has not been used internally except as a preservative in food, but it has been extensively employed topically by the medical profession and the public in self-medication as a nonirritant, detergent, mildly antiseptic solution, or protective ointment for inflammations of the skin, mucous membranes, and for wounds.[3]

Boric Acid Poisoning Cases

Most cases of boric acid poisoning have been due to therapeutic mistakes.[4] In one instance, boric acid solution was mistaken for boiled water in the preparation of the feeding formula for infants in a hospital.

The fatal dose of boric acid for adults is 15–30 Gm. Three to 6 Gm. have been fatal to children. Absorption of boric acid from the gastrointestinal tract is rapid. The skin absorbs appreciable quantities, even from ointments. The usual symptoms of boric acid poisoning are epigastric pain, vomiting, diarrhea, cold skin, weak pulse, and finally collapse and unconsciousness. There is pallor, sometimes cyanosis. Paroxysms of strangling are seen. Areas of pink color at the tips of the fingers, anus and other mucosae, with pink muscles and pink arterial blood are described. Dehydration may be marked.

Boric acid is slowly excreted by the kidney; there is no characteristic pathology, other than the peculiar pink coloration of blood and mucosae.

For treatment of boric acid poisoning, the patient should be kept in bed and body temperature maintained. The stomach should be emptied by lavage. Caffeine and digitalis are approved stimulants. Fluids should be forced to combat the dehydration and to hasten excretion of the acid.

A survey of the literature by Pfeiffer[5] yielded 86 cases of boric acid or borax poisoning with 42 deaths, or a mortality of 48.8%. Forty-three per cent of all poisoning cases occurred in infants under one year of age, and 45.2% of the total deaths was in this low age group. Among adults the greatest mortality occurred after application to a serous surface and to granulating tissue of burns and wounds.

In 1947, McNally and Rukstinat[6] reviewed the literature on poisoning by borates and were able to collect 58 cases. Of these, 28 terminated fatally. In 33 cases a boron preparation, usually boric acid, was accidentally substituted for some other therapeutic agent, usually glucose, and was administered orally, subcutaneously, or intravenously. There were also 4 fatal instances of poisoning by the treatment of burns with boric acid ointment. There were 3 deaths which resulted from the irrigation of closed cavities or wounds with boric acid solutions. Two cases of poisoning, one of which was fatal, followed the use of boric acid as a dusting powder. One death was attributed to the use of boric acid in bladder irrigations.

Brooke and Boggs[7] reported a case of boric acid poisoning involving a 9-month-old girl. The girl developed a diaper rash which was treated at home with zinc oxide paste and powdered boric acid. She died 6 hours after admission to the hospital. Autopsy showed a large concentration of boric acid in the brain, liver, kidney, heart, thymus, muscle, fat, whole blood, and serum. After death it was ascertained that about 9 ounces of powdered boric acid had been used in the preceding several days. It had been sprinkled liberally on the diapers and directly onto the skin.

An 8-week-old infant received 2–3 ounce portions of a saturated solution of boric acid by mistake.[8] A severe gastro-

* Presented to the Practical Pharmacy Section, Fourth Pan-American Congress of Pharmacy and Biochemistry, November 3–9, 1957, Washington, D.C.

[1] *Pharmacopeia of the United States of America*, 6th Rev., New York: William Wood and Company, 1882, p. 11.

[2] Godlee, R. J., *Lancet*, **1**, 694(1873).

[3] Osol, A., and Farrar, G. E. *The Dispensatory of the United States of America*, 25th Ed., Philadelphia, Pa., J. B. Lippincott Co., 1955. pp. 191–3.

[4] Thienes, C., and Haley, J., *Clinical Toxicology*, 2nd Ed., Philadelphia, Pa., Lea and Febiger, 1949. pp. 190–1.

[5] Pfeiffer, C. C., *Bull. Natl. Formulary Comm.*, **18**, 57(1950).

[6] McNally, W. D., and Rukstinat, G., *Med. Record*, **160**, 284(1947).

[7] Brooke, C., and Boggs, T. *Am. J. Diseases Children*, **82**, 465(1951).

[8] Willson, P., *J. Am. Med. Assoc.*, **66**, 63(1915).

enteritis followed, accompanied by rapid loss of weight and the appearance of a slight miliary eruption. Peeling was completed in about 10 days followed by a rapid recovery.

A 15-year-old boy received an enema of boric acid by mistake.[9] This was followed by a diffuse erythema and death. Autopsy showed a colitis limited to the lower half of the colon.

Analysis of the organs of 6 infants who had received by mistake from 60 to 150 ml. of a saturated solution of boric acid showed that the brain and liver accumulate about the same and the higher percentages of boric acid. The bowel contains an intermediate amount, while the stomach, heart, lungs, kidneys, and diaphragm contain lower percentages. Boric acid was distributed through the body by osmosis as well as by the circulation.[10]

After treatment of wounds (of a 4-year old child who had been severely burned) with 30 Gm. of boric acid, severe illness ensued. Death resulted in 4 days.[11] Postmortem examination showed, with the exception of degeneration of the liver and kidneys, no specific symptoms of boric acid poisoning.

A patient received a hypodermoclysis of 700 ml. of 4% boric acid solution instead of normal sodium chloride solution.[12] This treatment was followed by the intravenous and oral administration of 4.5 liters of fluid daily for one week and the application of hot magnesium sulfate compresses to the thighs where the boric acid solution had been administered. These areas showed little evidence of local action.

Grant and Wegner[13] reported that an 11-day-old girl was accidentally given 2 ounces of a 5% solution of boric acid. The infant regurgitated, and about 2 hours later was given another ounce of solution. It was found that sterile water and boric acid solution were kept in the same type container. The child died shortly thereafter. The urine showed the presence of boric acid crystals.

A spoonful of boric acid was ingested erroneously.[14] Treatment with Coramine brought about improvement, but semiconsciousness persisted. During the following days diarrhea, vomiting, and generalized erythema prevailed. Recovery was slow and complicated by the development of severe hyperthyroidism.

Contrary to the findings of Kahlenberg,[15,16] boric acid was not rapidly absorbed through the intact skin.[5] Thus skin absorption of boric acid is negligible and, insofar as urinary excretion is an index, such absorption does not occur.[17] The degree of absorption of boric acid from mucous membranes has not been accurately determined. Such absorption would be of minor importance in the therapeutic use of collyria, but can produce toxic symptoms if used over-enthusiastically, as a vaginal dusting powder or douche, as a mouth wash, for enamata, or for gastric or bladder lavage. The common urological practice of using a saturated boric acid solution as a bladder distending fluid for cystoscopy is proably safe if the mucosa of the bladder and urethra are unbroken. If this is traumatized, however, appreciable absorption may occur,[18] as with local anesthetics.

Serious surfaces such as the peritoneal or pleural spaces rapidly absorb boric acid. Ross and Conway[19] and also Molodenkow[20] report fatal intoxications when empyema cavities were lavaged with saturated boric acid solutions. Granulating wounds have an extremely rich blood supply separated from the surface only by a thin layer of capillary wall. Thus, it is not surprising that boric acid is rapidly absorbed whether applied in solution, as a powder, or as an ointment.[21]

Under the conditions of studies conducted by Vignec and Ellis[22] and Mulinos, Connant, and Hauser,[23] it was found that boric acid, when present in a 5% concentration in talc, is practically not absorbed through the intact skin of infants, even though erythema may be present.

A survey by Fisher[24] shows that despite recent debate about the safety and usefulness of boric acid, 94% of American dermatologists use the drug in their practice. Dr. Fisher reports, "For such popularity to be enjoyed by any drug certainly is confirmation of its usefulness in therapy." About 1,000 specialists certified by the American Board of Dermatology and Syphilology were asked if they have ever observed toxic reactions from the use of boric acid as wet dressings or ointments. About 75 indicated that they had seen some of the toxic symptoms, such as erythema or local allergic reactions. A few physicians suggested that these reactions have been due to the vehicle, but there seems to be the definite opinion that occasional individuals with acute dermatosis do not tolerate boric acid solution or ointments. Several of the dermatologists in this latter group pointed out that they had seen similar responses to aluminum acetate solution and other agents. Of those who indicated they had observed true toxic effects, four described briefly the internal administration or ingestion of boric acid. Eleven specified that the toxic reactions were in infants where extensive areas of atopic eczema were treated by bathing the infant in solution or covering large areas with ointment. The remaining cases of toxic reaction mentioned were in adults, one being a fatality following treatment of third-degree burns by massive boric acid packs. Four cases followed the use of boric acid over generalized exudative or exfoliative dermatitis. ' Another reaction occurred after the use of several pounds of ointment applied to extensive sulfuric acid burns. Some of the physicians commented as follows, "Boric acid is safe in ordinary usage." "There is danger only in infants or when applied to large areas of denuded skin." Four professors of dermatology, volunteered that they consider the danger of boric acid poisoning overrated. Several indicated that they prefer boric acid for home use because its inherent limit of solubility prevents the patient from doing himself harm by overenthusiatic strengthening of the solution. Many stated they have used boric acid for many years without observing any toxic effects. Included in these are 5 who have practiced their specialty more than 30 years, 3 more than 40 years, and 2 more than 50 years.

Discussion

Boric acid is a relatively nontoxic substance when used properly. Although there are many instances in the literature reporting the toxicity of boric acid, this toxicity manifests itself only under certain conditions. For example, boric acid is not absorbed to a great extent from the intact or unbroken skin. Therefore, in order to be toxic, boric acid must be injested or absorbed through broken skin.

Many of the deaths attributed to boric acid poisoning have been due to the erroneous use of this drug. Certainly this drug, and any other drug, should be handled cautiously. Many drugs are toxic when used in a manner other than that specified. Some of the reasons for this mistaken identity are due to its appearance. Boric acid resembles many common household items. Powdered boric acid looks like dextrose. Boric acid solution looks like distilled water. A suggested cure for this mistaken identity is the addition of a suitable, harmless, coloring agent to render the boric acid distinctive. Coloring for protection is used, for example, in the manufacture of sodium fluoride powder and mercury bichloride tablets.

Another reason for the toxicity of boric acid is its incorrect use. Boric acid should never be used over broken, exudative, or exfoliative skin. It should never be used over large areas of the body at any one time. Few persons have given much attention to the correct use of boric acid. Many physicians report that boric acid is relatively nontoxic when used properly. The physician and the patient should be taught the correct use of this drug rather than being prevented from using it. Boric acid is a useful medicinal agent, and its use should not be curtailed because of unfavorable publicity brought about by its incorrect use. ■

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[9] Bazin, A. T., *Can. Med. Assoc. J.*, **14**, 419, (1924); *Chem. Abstr.*, **18**, 2752(1924).

[10] McNally, W. D., and Rust, C. A., *J. Am. Med. Assoc.*, **90**, 382(1928).

[11] Cissel, H., *Zentr. Chir.*, 1933, 1635; *Quart. J. Pharm. and Pharmacol.*, **6**, 714; *Chem. Abstr.*, **28**, 5131(1934).

[12] Peyton, A., and Green, D., *Southern Med. J.*, **34**, 1286(1941); *Chem. Abstr.*, **36**, 832(1942).

[13] Grant, R. S., and Wegner, E. S., *Am. J. Diseases Children*, **75**, 910(1948).

[14] Rivas, A. E., *Semana méd.* 1950 II, 1196; *Chem. Abstr.*, **45**, 3943(1951).

[15] Kahlenberg, L., *J. Biol. Chem.*, **62**, 149(1924).

[16] Kahlenberg, L., and Barwasser, N., *ibid.*, **79**, 405(1928).

[17] Pfeiffer, C. C., Hallman, L. F., and Gersh, I., *J. Am. Med. Assoc.* **128**, 266(1945).

[18] Ponsold, A., *Deut. Z. ges. gerichtl, Med.*, **34**, 321, (1940); *Bull. Natl. Formulary Comm.*, **18**, 65(1950).

[19] Ross, C. A., and Conway, J. F., *Am. J. Surg.*, **60**, 386(1943).

[20] Molodenkow, *Lancet*, **I**, 756(1882).

[21] Maguire, G. C., *Practitioner*, **97**, 580(1916).

[22] Vignec, A. J., and Ellis, R., *Am. J. Diseases Children*, **88**, 72(1954).

[23] Mulinos, G., Connant, C., and Hauser, E., *Bull. N.Y. Med. Coll., Flower and Fifth Ave. Hosp.*, **16**, 92(1953).

[24] Fisher, R. S., *A.M.A. Arch. Dermatol.* **73**, 336(1956).

Economics

by Richard R. Dier

Purchasing Survey

Purchasing outlets of first aid products, make-up, and skin and hand care preparations are revealed in an interesting survey, "McCall's Drugs & Toiletries Purchase Diary Study," conducted for *McCall's Magazine* by the Home Testing Institute.

Retail pharmacies are preferred by the majority of buyers for first aid products, which include adhesive tape, gauze bandages, cotton and cotton balls, and pads. Supermarkets are the preferred outlets for adhesive bandages and cotton swabs.

Chart I—Percentages of Purchase by Outlets of First Aid Products, Make-up and Skin Care Preparations[a]

First Aid Products	Drug Stores	Supermarkets
Adhesive bandages	41.1	48.7
Adhesive tape	53.8	36.1
Cotton swabs	45.4	48.0
Gauze bandages	59.0	35.9
Cotton	58.9	32.9
Cotton balls, pads	57.8	26.7

Make-up Preparations	Drug Stores	Variety Stores	Dept. Stores
Lipstick	42.8	17.6	17.6
Face powder	40.7	16.1	20.6
Foundation creams and lotions and make-up bases (cream, liquid and cake)	38.6	18.0	18.6
Rouge	30.2	15.1	30.2
Eye make-up	26.5	53.1	8.2

Skin Care Preparations	Drug Stores	Supermarkets
Face creams and other face cleansers		
Cleansing and lubricating creams	38.7	19.7
Medicated creams	69.2	16.5
Other cosmetic creams (including hormone, acne, bleaching, eye, throat, freckle, etc.)	44.4	—
Toilet soap	5.5	87.5
Hand care preparations		
Hand lotions and creams	38.5	29.7

[a] From "McCall's Drugs & Toiletries Purchase Diary Study."

For make-up preparations, pharmacies are preferred over all other outlets for lipstick, face powder, and foundation creams and lotion purchases. Variety stores are patronized more than drug and department stores for eye make-up preparations. Department stores are patronized by exactly the same number of customers as pharmacies for purchases of rouge.

For skin care preparations, the first choice is the pharmacy for cleansing, medicated, and other creams. Supermarkets are the biggest sellers of toilet soap.

Pharmacies rank first in sales of hand lotions and creams (see Chart I).

Business Failures Decline

Only 47 retail pharmacies failed during the first four months of 1958 compared with 55 during a similar period in 1957. Total liabilities for the 1958 period were $1,000,000 compared to $1,800,000 in 1957.

This downward trend is particularly significant in view of the fact that all other retail trades reported more failures than a year ago, according to a report of the Business Economics Department of Dun & Bradstreet appearing in the June 1958 issue of *Dun's Review and Modern Industry*.

Business Danger Spots

Fifteen common danger spots that often cause retail business failures are sometimes overlooked by proprietors not using a proper control system, according to the Victor Adding Machine Co. In a recent study, the U.S. Department of Commerce pointed out that 88% of retail business failures resulted from improper record systems.

According to Victor, the danger spots are:

1. Improper balance between cash and charge business.
2. Incomplete information regarding charge account customers.
3. Overly delinquent charge accounts.
4. Not knowing exact status of accounts receivable.
5. Poor knowledge of exact cash position or balance.
6. Lack of knowledge of inventory.
7. Excessive family drains on the business.
8. Ignorance of accounts payable position of the business.
9. Poor pricing habits.
10. No check on business expenditures.
11. Lack of profit or loss information.
12. Lack of tax knowledge.
13. No realization of net worth.
14. Failure to recognize and follow changing trends.
15. Lack of current business information.

Medical Care Index Up Again

The medical care cost index rose 0.7% in May 1958 and attained a new high of 143.7. This figure compares with 137.3 in May 1957; 105.4 in June 1950; and 72.6 in 1939 (1947–49 equals 100). Medical care costs rose mainly because of increases in premiums for two group hospitalization plans affecting four cities and higher rates for professional and hospital services.

Prescription and non-prescription drugs represent approximately 15.1% of the medical care cost index.

Postwar Product Developments

An appraisal of the ethical drug industry from 1949 to 1957 indicates that antibiotics, vitamins and hematinics, and tranquilizers lead the field in manufacturers' sales.

Antibiotics are still going strong despite competition from newer variety combinations. Research continues to be intense and efforts are being made to develop antibiotics against broader spectra of organisms, including resistant strains of bacteria.

Tranquilizers continue to show increased sales. Future potentials of these drugs are tremendous.

Statistics on ethical drug sales at the manufacturers' level are contained in Chart II.

Estimated Sales at Manufacturers Level[a]

(In Millions of Dollars)

	1949	*1955*	*1956*	*1957*
Antibiotics	160	325	353	406
Vitamins and Hematinics	136	205	220	230
Endocrines				
Cortisone, Prednisone, etc.	—	84	89	88
Others	70	50	50	50
Sulfas	31	35	35	42
Antihistamines	14	35	35	38
Barbiturates	30	50	44	40
Biologicals	29	57	97	150
Acetylsalicylic Acid	12	20	25	28
Tranquilizers	—	85	135	195
Others	232	385	390	410
TOTAL ETHICAL SALES	714	1,331	1,473	1,677

[a] Source: Arthur D. Little, Inc.

Federal and State Actions

FDA ACTIONS

Illegal Over-the-Counter Sales for the Month of June

Willard M. Drew, t/a Drew's Pharmacy, Cedartown, Ga.—Refilling prescriptions for barbiturates without physicians' authorizations. Fined $500 and placed on probation for 2 years.

Samuel J. Defreese, M.D., Monroe, Ga.—Selling amphetamine and barbiturates not in the course of professional practice. Sentenced to 3 years in jail.

William H. Kuhn Drug Store, William H. Shaw, John Vidano & Nicholas B. Kozar, pharms., Joliet, Ill.—Selling amphetamine and penicillin-sulfonamides without physicians' prescriptions. Firm fined $250 plus $51 costs; Shaw and Vidano each fined $600; Kozar fined $100.

Larkin Williams, t/a Larkin's Confectionary, St. Louis, Mo.—Selling barbiturates without physicians' prescriptions. Fined $800 and placed on probation for 3 years.

Ralph F. DePalma, Jr., t/a Tap Pharmacy, Brooklyn, N.Y.—Selling and refilling prescriptions for antibiotics, amphetamine, sulfonamides, and hormones without physicians' authorizations. Fined $300.

Ransom Fred Carswell, Jr., employee, Waughtown Drug Store, Winston-Salem, N.C.—Refilling prescriptions for amphetamine without physicians' authorizations. Fined $1,000; 1-year jail sentence suspended. (Terminated in May but not previously reported.)

Cook's Drug Store, Acolphus S. Hale and Edward N. Watt, pharms., Ashtabula, Ohio—Selling prednisone, antibiotics, and hormones without physicians' prescriptions. Firm fined $500 which was suspended; Hale fined $500 and placed on probation for 1 year; Watt placed on probation for 1 year. (Terminated in May but not previously reported.)

George A. Turner, t/a Turner's Pharmacy, Ernest P. Smith, pharm., Ashtabula, Ohio—Selling amphetamine, hormones, and antibiotics without physicians' prescriptions. Turner fined $500 and placed on probation for 1 year; Smith placed on probation for 1 year.

Reuben Miller, t/a Rust Manor Pharmacy, Leo Strauss, pharm., Falls Church, Va.—Selling and refilling prescriptions for amphetamine without physicians' authorizations. Miller fined $3,000; Strauss fined $1,000; both placed on probation for 2 years.

Morris H. Yarmack, pharm., Falls Church Drug Store, Falls Church, Va.—Selling amphetamine and antibiotics without physicians' presciptions. Sentenced to 7 months in jail.

Leslie C. McGill, t/a Peoples Drug Company, Donald L. Taber, pharm., Janesville, Wis.—Refilling prescriptions for barbiturates and tranquilizers without physicians' authorizations. McGill and Taber both placed on probation for 1 year.

Misbranded Drugs

Meredyth Co., Irwin T. Sealfon, ptnr., Silver Spring, Md.—Elixir Albephen and Merbutal were repacked under labels which did not accurately describe the composition and strength of the products. Sealfon fined $1,000 plus $55 costs.

Violation of Probation

Isadore Arthur Shenk, t/a Garden Pharmacy, Philadelphia, Pa.—Violated probation imposed June 1956; sentenced to 6 months in jail for illegal prescription drug sales; remainder of 5-year probation to be resumed after serving jail sentence.

Statements of General Policy or Interpretation

3.507 *Location of expiration date in drug labeling.* Drugs which require an expiration date should show the expiration date on the immediate container. When the immediate container is packaged in an individual carton, the expiration date should also be placed on the carton. When single-dose containers are packed in individual cartons, the expiration date may properly appear on the carton only.

3.508 *Significance of control numbers on drug labeling.* The lot number on the label of a drug should be capable of yielding the complete manufacturing history of the package. An incorrect lot number may be regarded as causing the article to be misbranded.

3.510 *Over-the-counter drugs for minor sore throats; suggested warning.* The Food and Drug Administration has studied the problem of the labeling of lozenges or troches containing antibiotics and a local anesthetic, chewing gum containing aspirin, various mouth washes and gargles and other articles sold over the counter for the relief of minor irritations of the mouth or throat. It will not object to the labeling of suitable articles of this type "For the temporary relief of minor sore throats," provided this is immediately followed in the labeling with a warning statement in prominent type essentially as follows:

"Warning—Do not use in the presence of fever, headache, nausea, or vomiting. These usually indicate a severe infection. Do not use more than 2 days unless directed by physician. If irritation persists or increases, discontinue use and consult physician. Do not administer to children under 6 years of age unless directed by a physician." [*Fed. Reg.* **23,** 5379(July 16, 1958)]

Communicable Diseases Summary

THE number of cases of the communicable diseases shown in the table below are based on reports by Health Officers of each State and of Alaska, Hawaii, and Puerto Rico to the National Office of Vital Statistics of the Department of Health, Education, and Welfare, Washington, D.C. The number of cases of each disease occurring during each of the last 5 weeks are reported and also cumulative totals to date for 1958 and for the corresponding period of 1957. The approximate seasonal low point for each of the diseases is shown in the last column. The 1953–1957 medians will appear next month.

Communicable Disease	Cases Reported for Week Ending					Cumulative Number		Low Point (Approximate Seasonal)
Selected Notifiable Disease	*June 14, 1958*[a]	*June 21, 1958*[b]	*June 28, 1958*	*July 5, 1958*	*July 12, 1958*	*First 28 Weeks 1958*	*1957*	
Anthrax	–	2[c]	–	1[e]	2[f]	7	12	[g]
Botulism	–	–	1[d]	–	–	3	1	[g]
Brucellosis	16	23	16	22	32	438	542	[g]
Diphtheria	12	5	7	9	10	371	495	July 1
Encephalitis, infectious	38	40	38	33	33	847[h]	787	June 1
Hepatitis, infectious and serum	231	278	223	224	247	8,869	9,411	Sept. 1
Malaria	1	–	1	5	–	35	55	[g]
Measles	27,407	21,366	15,307	10,523	9,675	683,600	433,641	Sept. 1
Meningococcal infections	34	34	38	35	33	1,491	1,447	Sept. 1
Meningitis, other	84	26	31	48	37	1,326	999	– – –
Poliomyelitis	55	56	70	63	104	791	1,727	Apr. 1
Paralytic	25	28	37	30	44	387	730	Apr. 1
Nonparalytic	22	19	25	22	34	267	764	Apr. 1
Unspecified	8	9	8	11	26	137	233	Apr. 1
Psittacosis	5	1	2	7	3	80	159	[g]
Rabies in man	–	–	–	–	–	2	3	[g]
Typhoid fever	24	18	18	22	25	449	613	Apr. 1
Typhus fever, endemic	3	2	5	1	–	34	62	Apr. 1

[a] Data exclude report from S.Dak. for current week. [b] Data exclude report from S.Dak. for current week. [c] Reported in La. and Mass. [d] Reported in Calif. [e] Reported in Ark. [f] Reported in Ark., and S.Dak. [g] Data show no pronounced seasonal change in incidence. [h] Includes revised report from Ind. for week ended June 28. Symbols: 1 dash (–): no cases reported; 3 dashes (– – –): data not available.

Apothecary

John Tweedy's Catalogue of Druggs

by | George Griffenhagen*

THERE is[1] in the Surgeon General's Library (now the National Library of Medicine), a drug catalogue which has been entirely overlooked by pharmaceutical historians[2], recording an interesting and significant phase of Pharmacy in colonial America.

The pamphlet is entitled "A Catalogue of Druggs, and of Chymical and Galenical Medicines; Sold by John Tweedy at His Shop in Newport, Rhode-Island. And for Him in New-York, at the Sign of the Unicorn and Mortar." Though undated, Evans,[3] Hammett,[4] and Alden[5] ascribe it to the year 1760. Evans[3] reports that it was printed in Newport by James Franklin; however Alden[5] concedes that the catalogue may well have been printed in New York or elsewhere.

The Tweedy catalogue in the National Library of Medicine is trimmed to $4^1/_4$ by $6^1/_2$ inches and includes 28 printed pages with penned notations and 3 additional pages of manuscript notes. The penned entries appear to be an inventory, and not "prices" as is suggested by the Surgeon General's catalogue. The title page includes the penned notation "Extract [?] of Shop. Jan 1. [ ]." The year has been torn off the corner of the page.

The inventory shows that of the 616 printed items, 451 were in stock. An additional 141 penned entries not printed comprises a total inventory of 592 different items. The majority of the drugs were listed in quantities of from 2 to 20 ounces and indications are that many were kept in more than one container, even when in small quantities.

Some of the items were listed in sizeable bulk quantities. These include $5^1/_2$ gallons of rectified spirits of wine (*Sp. Vin. Rectif.*) and 5 gallons each of compound bryony water (*Aq. Bryon. C.*) and compound peony water (*Aq. Paeon. C.*). Also on hand was 8 gallons of Barbadoes tar (*Pissel. Indic.*), which according to Quincy[7] "is effectual in obstinate tickling coughs, and sometimes succeeds where more elegant medicines have failed."

Other items were packaged ready for sale. These included $45^1/_2$ dozen bottles of hungary water (*Aq. Hungar.*) which according to Quincy[8] "is very fragrant, insomuch as to be in common use as a perfume." Also in stock were 33 dozen bottles of calamine (*Lap. Calamin.*) which according to Lewis[9] is a "mineral found plentifully in England. . .discovered to be an ore of zinc. . .reducible into a fine powder. . . employed for drying up moist running ulcers, and healing excoriations."

The English patent medicines were very much in evidence. On hand were $45^1/_2$ dozen bottles of Bateman's Pectoral Drops; $25^1/_3$ dozen Hopper's Female Pills; 24 dozen bottles of British Oil (14 dozen Betton's and 10 dozen Darby's brand); 11 dozen bottles of Turlington's Balsam of Life (5 dozen large and 6 dozen small); and "146 Boxes" of Lockyer's Pills. Stoughton's Elixir (incorrectly spelled in the catalogue as *Elix. Staughton*) and Daffy's Elixir (listed under *Elix. Salutis*) were kept both in packages and in bulk, indicating that both of these items were being packaged by Tweedy. The inventory for Stoughton's was 70 dozen bottles and $1^1/_2$ gallons, while Daffy's was 5 dozen bottles and 5 gallons.[10]

Crude drugs in sizeable quantities included juniper berries, dill, tamarinds, gentian root, and sarsaparilla. Ancient formulations on hand included 274 ounces of *Theriac Andromachus* and 130 ounces of *Mithridate*. Typical mediaeval concoctions as $^1/_2$ ounce of spirit of man's skull (*Sp. Cran. Human*) and 6 ounces of viper's troches (*Troch Viperar*) were also included in the inventory.

A quantity of *Spec*[ie] *Bot*[tles with] *Br*[rass] *Caps* in both half-pint and pint sizes were in stock; and 50 gross of common corks and 2 gross of large corks were listed in the penned inventory. "Dyer's Ware" and "Painter Colours" were represented by a large inventory of *Spa*[nish] *Brown*, [Spanish]*White*, *fine Yellow*, *Com*[mon Yellow], and *Oker*, along with 56 gallons of linseed oil, 42 gallons of oil of turpentine and 40 gallons of varnish.

According to Updike,[11] "the house of John and William Tweedy of Newport was previous to the Revolution the largest importer of drugs in the American colonies. It maintained a branch office in New York where dealers could ascertain the prices which had been fixed in Rhode Island."

John Tweedy, born in 1707, was listed as a Newport "apothecary" in a deed dated September 23, 1751. The first issue of the *Newport Mercury* (June 19,

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[1] *Index-Catalogue of the Library of the Surgeon General's Office*, United States Army, vol. 14, p. 910, Washington, D.C., 1893. A second copy of the Tweedy *Catalogue* (with pages 21–28 missing and without manuscript notations) is preserved at the Rhode Island Historical Society in Providence.

[2] Even though overlooked by pharmaceutical historians, it has been included in general bibliographies. See references 3–5.

[3] Evans, Charles, *American Bibliography*, vol. 3, (1751–1764), #8753, New York, 1941.

[4] Hammett, Charles E., Jr., *A Contribution to the Bibliography of Newport, R.I.*, p. 34, Newport, 1887.

[5] Alden, John Eliot, *Rhode Island Imprints 1727–1800*, p. 95, New York, 1949.

[7] Quincy, John, *Pharmacopoeia Officinalis Extemporanea*, p. 141, London, 1769.

[8] *Ibid.*, p. 386. For a history of hungary water, see A. C. Wootton's *Chronicles of Pharmacy*, vol. 1, pp. 296–298, London, 1910.

[9] Lewis, William, *The Edinburgh New Dispensatory*, p. 109, Edinburgh, 1786.

[10] For details on these English patent medicines, see Young, James Harvey, and George Griffenhagen, "Old English Patent Medicines in America," *The Chemist and Druggist*, vol. 167, pp. 714–722, June 29, 1957.

[11] Updike, Wilkins, *A History of the Episcopal Church in Narragansett, Rhode Island*, vol. 2, p. 296, Boston, 1907.

1758) carried Tweedy's advertisement as follows:

"Just Imported from London by the Captains Davis and Tomlinson, via New York, And to be Sold reasonably by JOHN TWEEDY A Very large assortment of Druggs, Medicines, Dyer's Ware, Painter's Colours, Spices, Vials, Pots, Surgeon's Instruments of all Sorts, Turlington's Balsam, Hooper's, Lochyer's, and Anderson's Pills, Bateman's Drops, Daffy's Elixir, Anodyne Necklaces, &c. &c. &c."

John Tweedy was a regular advertiser in James Franklin's *Newport Mercury*[12], supporting the speculation that the Tweedy catalogue was printed by Franklin. However, a check with the original account book of James Franklin[13] does not confirm such speculation.

In 1763, John Tweedy's sons, William (born 1736) and John, Jr. (born 1740) commenced business in Newport "next Door below the GOLDEN EAGLE" advertising in the *Newport Mercury*[14] "Drugs of all Kinds, with chymical and galenical Preparations, and Family Medicines. . ." After June 6, 1763[15] John Junior was no longer mentioned but William Tweedy continued advertising, apparently competing with his father, for another ten years.[16]

[12] John Tweedy's advertisements appeared in the following issues of the *Newport Mercury:* June 19, 1758; April 10, 17, May 22, June 5, 26, 1759; Nov. 7–Dec. 12, 1763; Sept. 10, 1764; Jan. 14; Aug. 26–Sept. 16, Oct. 28–Nov. 18, 1765; and June 5, 1769.

[13] Brigham, Herbert O., Librarian, Newport Historical Society, Personal letter dated June 11, 1958.

[14] *Newport Mercury,* March 28–May 2, 1763. A different advertisement for "W. & J. Tweedy, Jr." appears in the *Mercury* for May 9–June 6, 1763.

[15] *Newport Mercury,* Dec. 19, 1763–Jan. 30, 1764.

[16] *Newport Mercury,* Sept. 10–Oct. 1, 1764; April 29–May 20, July 8–Aug. 19, 1765; May 5–June 23, 1766; May 4–11, July 13–Aug. 31, 1772; and May 10, 1773.

John Tweedy outlived his son William (who died in 1782) and two wives (Mary Tillinghast Tweedy died 1735 and Freelove Crawford Tweedy died 1769). The *Newport Mercury* reported that John Tweedy died on November 15, 1787 "in his 81st year about 60 of which he resided in this town and transacted extensive business with great reputation and was a firm and patriotic friend to his country."[17]

The Shop "at the Sign of the Unicorn and Mortar" in New-York, mentioned in the Tweedy *Catalogue,* was operated by Patrick Carryl in Hanover Square, the principle business center in New York City during the mid-18th century. Patrick Carryl advertised in the *New-York Post-Boy* on January 28, 1750/51 as follows:[18]

"Just Imported, and to be sold wholesale or retail, by Patrick Carryl, at the Sign of the Unicorn & Mortar, in Hanover Square. A Compleat Assortment of Druggs & Medicines, as also Perry's and Betton's British Oil, Cripple Curing Oil, Bateman's pectoral Drops, Turlington's Balsam of Life, Daffy's Elixir, Anodyne Necklaces, Stoughton's Bitters, Hungary Water, Hooper's Female Pills, Lockyer's pills, Shop Furniture for Apothecaries, Vials, Pots, &c. &c. For this Province, as well as New-England Money, at the usual Difference of Exchange, and particularly Rhode-Island and Connecticut at an equal Exchange."

It would appear that Carryl was at this early date seeking to establish himself not only as a leading New York druggist, but also as a leading importer and wholesaler for all of New England. It is undoubtedly in this way that Tweedy and Carryl commenced business.

In 1752, Carryl's advertisement discontinued the reference to the Rhode Island market suggesting that Tweedy was then tending to the New England area for Carryl.

Between 1752 and 1756 Carryl's advertisements, all of which were nearly identical, appeared no less than 58 times in the *New-York Post-Boy.*[19] Then on March 28, 1757, the Carryl *New-York Post-Boy* advertisement was revised considerably for a single issue and ceased to appear. The revision clearly indicates spelling and format similar to the Tweedy *Newport Mercury* advertisements. Carryl died between July 4, 1765 and March 22, 1766.[20]

Comparisons between the catalogue, Tweedy's *Mercury* and Carryl's *Post-Boy* advertisements strongly suggest that both the printing and the penned inventory date from between 1757 and 1760. There appears to be no doubt that Carryl was the leading druggist in New York in the 1750's and Tweedy certainly was Newport's leading druggist of the period. When these two entrepreneurs joined forces, they could well have been the largest importers of drugs in the American colonies as claimed by Updike. Perhaps this was even the first chain type of wholesale drug operation in the American colonies, and the Tweedy *Catalogue* certainly set a pattern for the hundreds of drug catalogues published in the U.S. during the later 18th and entire 19th centuries.■

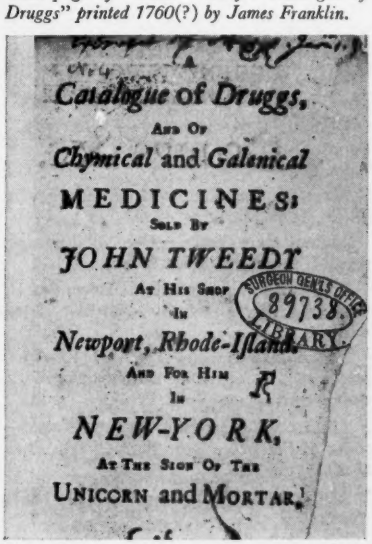
[17] Brigham, *l.c.*

[18] This advertisement was also carried in the *New-York Post-Boy,* Feb. 4, 18, June 3, 10, 1751.

[19] *New York Post-Boy,* Dec. 4, 11, 18, 1752; Jan. 1, 8, 15, 22, 29, Feb. 5, 12, 19, April 9, 16, 30, May 21, 28, July 9, Sept. 10, Oct. 8, Nov. 19, 1753; Jan. 7, 14, 21, 28, Feb. 25, March 25, June 24, July 1, 8, 15, 29, Aug. 5, Sept. 9, Oct. 21, Nov. 4, Dec. 9, 1754; Jan. 27, June 23, 30, July 14, 28, Aug. 4, Sept. 8, 15, Dec. 29, 1755; Jan. 19, 26, Feb. 2, 9, March 8, June 7, Sept. 20, Oct. 18, Nov. 1, 8, 15, Dec. 13, 20, 1756.

[20] Will of Patrick Caryl(sic) in *Collections of the New-York Historical Society for the Year 1897,* p. 436, New York, 1898.

Title page of "John Tweedy's Catalogue of Druggs" printed 1760(?) by James Franklin.


A
Catalogue of Druggs,
And Of
Chymical and Galenical
MEDICINES:
Sold By
JOHN TWEEDY
At His Shop
In
Newport, Rhode-Island.
And For Him
In
NEW-YORK,
At The Sign Of The
UNICORN and MORTAR.
SURGEON GEN'LS OFFICE 89738 LIBRARY

New York Fire Company of 1750 fights conflagration. Apothecary shop "Sign of The Unicorn and Mortar" undoubtedly occupied building similar to one of these. (Courtesy of Stokes Coll., N.Y. Pub. Lib.)

Members

The Association Extends a Cordial Welcome to the Following Men and Women Who Were Accepted for Active Membership During the Month Preceeding Preparation of This Issue.

NEW LIFE MEMBERS
Belcastro, Patrick F., Lafayette, Ind.
Bloom, Martin F., Green Cove Springs, Fla.

☆ ☆

ALABAMA
Kynard, B. W., Selma

ARIZONA
Wiseman, John R., Tuba City

ARKANSAS
Junkin, Abner K., North Little Rock

CALIFORNIA
Bodenschatz, Emil W., Santa Clara
Effron, Herbert M., Los Gatos
Matsui, Katherine K., Berkeley
Paschall, William G., Long Beach

CONNECTICUT
Sylvester, Raphael, West Hartford
Vigneau, Edward P., Hartford

DISTRICT OF COLUMBIA
Silber, Ida E., 19th St. & Massachusetts Ave., S.E.

FLORIDA
Bokas, George V., Pensacola

ILLINOIS
Bortz, Harry, Chicago
Sister M. Edwina, Chicago

INDIANA
Rawlings, Charles T., Dunkirk

KANSAS
Lindsay, Robert T., Leavenworth

MISSOURI
Covington, Charles M., Webster Groves

NEW JERSEY
Burks, Harry O., Orange
Jewett, Gale K., New Brunswick
Luther, J. Wayne, Summit
McIntyre, Joseph P., Livingston
Shaw, Richard N., Ridgewood
Slade, G. M., Morristown

NEW MEXICO
Orme, Nelda, Albuquerque

NEW YORK
Cherniak, Walter, Cohoes
DeClare, Kathleen A., Niagara Falls
Green, Norman, Brooklyn
Hoff, Charles E., Buffalo
Myers, Robert L., Hamilton
Seitz, Harold W., Albany
Tompa, Dolores, New York City

NORTH CAROLINA
Yandle, Howard A., Chapel Hill

OHIO
Brown, Emily Ann, Rawson
Clason, John E., Lakewood
Geagan, Joseph J., Toledo
Hussey, Anda D., Cleveland

OKLAHOMA
Conley, H. Leon, Oklahoma City
Hefner, Hal L., Henryetta
Ross, H. W. Jack, Broken Arrow

PENNSYLVANIA
Aversa, Frances, Philadelphia
Fleetwood, Horace J., Clifton Heights

TENNESSEE
Nolan, William R., Memphis
Taylor, Allen S., Memphis

TEXAS
Dalrymple, David V., Tyler

UTAH
Speakman, Eugene C., Salt Lake City

VIRGINIA
Thacker, Wallace B., Lynchburg

Deceased

Cox, Cyrus L., Newark, N.J., June 23, 1958 (Life Member)
Crossen, George E., Corvallis, Oreg., June 28, 1958 (Life Member)
Cygiel, John G., Kansas City, Kans., Dec 10, 1957
Drouillard, Joseph R., Flatrock, Mich., Mar. 25, 1958
Gerbinsky, Walter F., Manitowoc, Wis., May 7, 1958
Hosler, W. W., Memphis, Tenn., June 9, 1958
Legrand, Adolfo E., Santurce, P.R., June 21, 1958
Lynch, Mary G., Kansas City, Mo. (Student)
Meigs, Jamie L., Centerville, Ala., Feb. 12, 1958
Mersky, Milton E., Pittsburgh, Pa., Nov. 21, 1957
Miller, Anna Ivah, Pittsfield, Mass., May 28, 1958
Peiser, Roy S., Chicago, Ill., June 20, 1958
Sister Mary Paul, Darby, Pa.
Wood, Horatio C., Philadelphia, Pa., Mar. 1958 (Life Member)

WASHINGTON
Bigham, Dean, Seattle
Endslow, Donald S., Spokane

WISCONSIN
Strommen, Richard S., Fort Atkinson
Wherrey, George W., Racine

INTERNATIONAL
Sister M. Immaculata, Banff, Alberta, Canada
Varkey, P. K., Dhahran, Saudi Arabia

Obituaries

Arthur D. Ball, 48, Becton, Dickinson Sales Executive, died suddenly on June 11 at his home in Packanack Lake, N.J. Mr. Ball had served with the firm for 25 years, during which time he worked not only on the executive staff at B-D's Rutherford office, but formed the Sales Department of the company's Mexican subsidary, Mapad. At the time of his death he was affiliated with the industrial division of The Wilson Rubber Company, also a subsidiary of B-D.

Cyrus L. Cox, 70, Professor Emeritus of Pharmacy at Rutgers University, died in his sleep on June 23 after a long illness. Having obtained his Ph.G., Ph.C. and B.S. degrees from Valparaiso University, Valparaiso, Ind., he became a Pharmacy professor there in 1918. In 1928 he joined the Rutgers faculty. He was for several years Secretary of the Northern New Jersey Branch of APhA and had served as a national officer of Kappa Psi. He was also a member of Rho Chi.

Dr. William W. Hosler, 57, passed away June 10 in Memphis, Tenn. A graduate of Western Reserve University, he held his D.Sc. from Philadelphia College of Pharmacy and Science. Until 1940 he was Vice President of the Miller Drug Company in Cleveland, Ohio, and in that year he became Vice President of Strong, Cobb & Company. At the time of his death he was associated with Plough, Inc. He was a member of the American Chemical Society and the Pharmaceutical Manufacturers Association, in addition to APhA.

Coming Events

New York Health Show—Aug. 6–23, N.Y. Coliseum.

W.Va. Pharm. Assn.—Aug. 10–12, Greenbrier, White Sulphur Springs.

World Medical Assn.—Aug. 15–20, 12th Gen. Assembly, Copenhagen, Denmark.

Occupational Medicine & Toxicology—Aug. 18–22, 2nd Inter-American Conf., Miami, Fla., Dr. Wm. Deichmann, Prof. of Pharmacology, Univ. of Miami, Chairman.

AACP and NABP—Aug. 24–26, District 3, Biloxi, Miss.

Puerto Rico Pharm. Assn.—Aug. 29–31, San Juan.

Staphylococcal Disease Conf.—Sept. 15–17, Com. Dis. Center, PHS, Atlanta, Ga.

Natl. Assn. Retail Druggists—Sept. 28–Oct. 2, 60th ann. conv., Philadelphia.

NABP and AACP—Oct. 6–7, Dist. No. 1, ann. mtg., Kenmore Hotel, Boston.

Second Int. Mtg. of Pharmaceutical History—Oct. 7–9, Venice, Italy.

Antibiotics Symposium, 6th—Oct. 15–17, Willard Hotel, Washington, D.C.

United Nations Day—Oct. 24, Presidential proclamation.

American Heart Association—Oct. 24–26, 10th anniv., Civic Center, San Francisco.

Assn. of Consulting Chemists and Chem. Engineers, Inc.—Oct. 28, 30th ann. mtg., Biltmore Hotel, New York City.

Parenteral Drug Assn.—Oct. 29–31, ann. mtg., Hotel Statler, N.Y.

Univ. of Wisconsin—Nov. 6–8, Fall Pharm. Institute.

Gerontological Society, Inc.—Nov. 6–8, 11th ann. mtg., Bellevue Stratford, Philadelphia.

American Education Week–Nov. 9–15.

Veterans Day—Nov. 11. Presidential proclamation.

Diabetic Detection Drive—Nov. 16–22. Sponsor: American Diabetes Assn., New York 17.

Air Pollution Conference, natl.—Nov. 18–20, 1958, Washington, D.C.

Animal Care Panel—Dec. 3, 9th ann. mtg., Hamilton Hotel, Chicago.

Toilet Goods Association—December 8, Scientific Sect., Waldorf-Astoria, New York.

Proprietary Assoc.—Dec. 11–13 Ann. Research & Scientific Dev. Conf., Waldorf-Astoria, New York.

American Association for the Advancement of Science—Dec. 26–31, natl. mtg., Washington, D.C.

APhA 1959 Conv.—Apr. 19–24 1959, Cincinnati, Ohio.

Prescription Practice

Progress in Medicine

by Samuel W. Goldstein

Anemia Due to Salicylazosulfapyridine

A report on clinical observations with salicylazosulfapyridine (Salazopyrin in Britain; Azulfidine in U.S.), a drug used for treating ulcerative colitis, describes 3 cases of toxic anemia with Heinz-body formation. The report by A. I. Spriggs, *et al.*, *Lancet*, **1,** 1039 (1958), notes that nausea or vomiting develops in 1 out of 5 or 6 patients treated orally with Salazopyrin, but serious toxic reactions are said to be rare. The recent findings indicate that the blood of patients treated with salicylazosulfapyridine should be examined regularly for Heinz bodies.

Aspirin, APC, Buffered Aspirin

Clinical studies on 236 inmates at the State Prison of Southern Michigan, with prior history of gastric distress following the use of aspirin or combinations of aspirin, phenacetin, and caffeine, were reported by Dr. D. B. Sher at the World Congress of Gastroenterology in May 1958 at Washington, D.C. Dr. Sher observed that results (recorded by subjects) indicated gastric irritation in the following percentages of total administrations: Bufferin, 5.2%; aspirin (4 brands) 62.8%; APC (3 brands) 45%; placebo, 2.1%. Administration to fasting and nonfasting subjects gave similar results with aspirin and APC; but after Bufferin, gastric reactions were noted in 6.7% with fasting and 3.7% with nonfasting subjects. So-called "severe" reactions were recorded with 33.1% APC, 18.3% aspirin, and 2.9% Bufferin dosages.

Reports on other studies with aspirin, buffered aspirin, and APC combinations were noted in THIS JOURNAL, **19,** 238(April 1958).

Chelating Agents—Intravenous Dosage

A report by M. J. Seven, *Antibiotic Med. & Clin. Therapy*, **5,** 251(1958), reviews published information on toxic reactions to intravenous administration of disodium EDTA and calcium disodium EDTA as detoxifying agents. Studies with a new agent, disodium N-hydroxyethylenediamine triacetate (Na_2HEDTA), in the treatment of heavy metal storage diseases indicate that a desirable i.v. dosage for this compound or its calcium chelate is 3 Gm. for average size adults in any 24-hr. period, the dosage for children to be proportionately smaller. Larger doses may produce a variety of toxic symptoms.

Effective Immunity Against Polio

The degree and duration of the effects produced by 3 injections of killed-poliovirus vaccine in a number of children, whose antibody titer in the blood was followed for periods up to 4 years, are reported by Dr. J. E. Salk, *J. Am. Med. Assoc.*, **167,** 1(1958). The data showed an initial rise in antibodies following vaccination, a secondary rise to a maximum after booster injections, and gradual decline to a plateau. There was no evidence of harmful effect from up to 6 injections, but there are not sufficient epidemiological reasons to campaign for a fourth injection. Multiple injections of a vaccine of low potency are not as reliable for immunization as are fewer injections of a vaccine of adequate potency.

Identification Colors for Drugs

"The use of color as a coding device is more likely to contribute to than to prevent confusion in the identity of drug preparations" in hospital practice. This conclusion by both the AMA Council on Drugs and its Committee on Toxicology was reported in *J. Am. Med. Assoc.*, **166,** 1988(1958). The Council was impressed by the practical limitations of the visual spectrum for achieving distinction between the vast number and kinds of preparations employed in medicine as well as by the existing widespread use of colored medicaments for different purposes. Other practical difficulties include color blindness and the use of light-protective colored glass containers for certain drug preparations. The Council and the Committee concur with the view of the Food and Drug Administration that the addition of dyes to parenteral solutions for the purpose of identification should be discouraged. The Council believes that the problem of mistakes in identity and improper use of solutions and drugs for any purpose both inside and outside hospitals can best be met by greater emphasis on the education of all health personnel and patients to exercise due care in applying and consulting properly informative labels.

Iproniazid and Liver Damage

A report on 3 detailed cases and 2 other cases (all women) in which liver dysfunction was noted during therapy with iproniazid, orally, 50 mg. to 150 mg. daily, is given by Drs. L. Zetzel and H. Kaplan, *New Engl. J. Med.*, **258,** 1209(June 12, 1958). After discussing the conditions of the patients, and noting factors such as other drugs consumed, the physicians state: "There is thus no unequivocal evidence relating iproniazid etiologically to the observed liver disease. With the ubiquitous nature of viral hepatitis and the increasing use of iproniazid, such an association may be only coincidental. However, the possibility that such severe liver disease represents the toxic effect of this drug cannot be disregarded. Further experience may establish the relation on firmer ground. For the present, the evidence seems sufficient to warrant consideration of serious liver damage as a possible hazard of iproniazid therapy. This should not preclude its use in cases in which the indications are definite, and the potential risks clearly understood. The final decision will thus be based on an obvious need and reasonable prospects for a favorable response, rather than on an indiscriminate and casual attitude devoid of careful clinical judgment."

Iron Choline Citrate Safer Orally

Clinical observations on 131 patients with iron deficiency anemia, who were given orally tablets (330-mg.) of the chelated iron preparation, iron choline citrate (Ferrolip), between meals on empty stomachs, are reported by Dr. M. Franklin, *et al.*, *J. Am. Med. Assoc.*, **166,** 1685(Apr. 5, 1958). They note that few of the common symptoms attributed to oral iron compounds, such as nausea, vomiting, abdominal cramps, diarrhea, and constipation, appeared. Animal tests also indicated that the chelated iron form was safer in overdosage than ferrous sulfate and ferrous gluconate.

Meprobamate Habituation

A study with 3 groups of 25 patients receiving respectively identical placebos or meprobamate, 6.4 Gm. daily, or meprobamate, 3.2 Gm. daily, is reported by T. M. Haizlip and J. A. Ewing, *New Engl. J. Med.*, **258,** 1181(June 12, 1958). After 40 days all patients were switched to placebo with the following results. "Clinical observation revealed objective evidence of an abstinence syndrome in 44 out of 47 patients who were previously on meprobamate. The typical withdrawal syndrome included vari-

Continued on page 502

ous degrees of insomnia, vomiting, tremors, muscle twitching, overt anxiety, anorexia, and ataxia. Eight patients showed a picture of hallucinosis with marked anxiety and tremors much resembling delirium tremens. In 3 patients grand-mal seizures developed. The effects and the withdrawal syndrome of meprobamate at both dose levels were statistically significant as compared with placebo in this study. It is concluded that meprobamate closely simulates the barbiturates, but has advantages over the barbiturates. However, it seems wise to start the drug slowly and to discontinue it slowly, to prevent the occurrence of withdrawal symptoms."

Methocarbamol—Clinical Studies

Reports on the clinical use of the interneural blocking agent methocarbamol (Robaxin) have been published in *J. Am. Med. Assoc.*, **167,** 160, 163, 168 (May 10, 1958). Drs. D. S. O'Doherty and C. D. Shields (p. 160) found that in 70 patients with skeletal muscle hyperactivity secondary to neurological d's order, oral dosage of 1–4 Gm. daily, in divided doses, methocarbamol gave excellent results in all patients treated for acute skeletal muscle spasm; good results in 72% of the patients with both acute and chronic spasm; improvement in all patients (good in half, fair in others) with incoordination; negative results in patients with contractures, rigidity, spasticity, and chronic fibromyositis. They conclude that methocarbamol is of value in muscle spasm and severe flexor spasms accompanying cord disease and has as well a more limited use in the treatment of incoordination.

Observations on 65 patients with acute or chronic orthopedic conditions and 18 patients recovering from orthopedic surgery, all given 6 Gm. of methocarbamol orally per day in divided doses, indicated that the drug facilitated treatment and hastened recovery, according to Dr. H. F. Forsyth (p. 163). He found that side effects were minor, but occasionally made it necessary to reduce or interrupt medication.

Dr. H. W. Park (p. 168) administered methocarbamol to 42 patients with neuromuscular diseases marked by involuntary muscular activity. Given intravenously, the drug caused significant reduction of both involuntary tonic and clonic contractions in 27 out of 30 patients whose symptoms were ascribed to lesions of the pyramidal tracts or to acute myalgic disorders. If relief was obtained, it appeared within 30 to 45 minutes.

New Hormone (Provera) Studied

A new synthetic hormone, 6-alpha-methyl-17-alpha-acetoxyprogesterone (Provera, Upjohn), has shown high physiological potency, according to a report on its synthesis (J. C. Babcock, *et al.*), biological properties and preliminary clinical trials (L. E. Barnes and W. E. Dullin, and Dr. J. C. Stucki) in *J. Am. Chem. Soc.*, **80,** 2904(1958). A comparative subdermal test indicated the compound was 50–60 times as active as progesterone. In the form of oral tablets it was 100–300 times as active as orally active ethisterone. Animal tests indicate the compound is an ovulation inhibitor. With pregnant rats deprived of their ovaries on the eighth day of pregnancy, the new compound appeared to be 25–100 times as potent as progesterone in maintaining pregnancy to its proper term.

Oral Antidiabetic Drugs—Mode of Action

A review by K. Lundbaek, *et al.*, *Lancet*, **1,** 1036(1958), of published studies on the mode of action of oral antidiabetic compounds concludes: "On present evidence the hypoglycemic effect of the oral antidiabetic drugs cannot be explained by interference with the endocrine balance of the organism. Among the modes of action of these compounds, inhibition of the output of glucose by the liver and enhancement of the uptake of glucose at the periphery seem to be acceptable. The detail of the changes in enzyme activities probably involved in the hepatic and peripheral effects have not been elucidated. It is suggested that the hypoglycemic effect of the oral antidaibetic compounds is determined not by the presence or absence of insulin but by the degree of diabetic aberration of metabolism."

Polio Vaccine Harmless to Brain

Studies of electroencephalograms obtained from 852 normal subjects before and after each of 3 inoculations with Salk polio vaccine showed that no abnormalities were induced, according to a report by E. L. Gibbs and F. A. Gibbs, *J. Am. Med. Assoc.*, **167,** 929(June 21, 1958). Similar studies with 106 persons with brain disorders, including 44 epileptics, showed no evidence of harm from the vaccinations.

Rapid Digitalization of Ambulatory Patients

Working with ambulatory patients with atrial fibrillation, Drs. E. Hellman and M. Port, *J. Am. Med. Assoc.*, **167,** 215(May 10, 1958), found that adequate digitalization was obtained in 15 of the 16 patients by means of a single i.m. injection of deslanoside (desacetyllanatoside C, lanatoside D) (1.6 mg. in 16 trials and 1.2 mg. in 3 trials). In 12 of the trials, maintenance therapy with acetyldigitoxin (0.1–0.2 mg. daily) was begun on the same day. Moderate to severe pain at the site of injection was noted in 7 of 19 trials. No toxic effects were noted.

Staphylomycin Clinical Trial

Clinical use of staphylomycin, a streptogramin-like substance (composed of 3 compounds), in 50 patients with infections due to staphylococci resistant to all available antibiotics, is reported by P. De Somer and H. Van de Voorde, *Antibiotic Med. & Clin. Therapy*, **4,** 786 (1957). The drug, in 100-mg. capsules, was given orally 1.5–2 Gm. in 4 divided doses and, if response was noted in 24 hrs., the dose was reduced to 1 Gm. daily. Results are considered to be favorable. Although a low percentage of staphylomycin is excreted in the urine, it still was curative in urinary tract infections. The drug was effective also in local treatment of open, infected wounds. Side reactions occurred in 2 patients: one showed loss of appetite; the other some itching and dizziness.

Sulfamethoxypyridazine—Clinical Study

A clinical study on the use of sulfamethoxypyridazine (Kynex) for genitourinary tract therapy after surgery (22 cases) and other conditions (3 cases) is reported by I. M. Prlina, *et al.*, *Antibiotic Med. & Clin. Therapy*, **5,** 242 (1958). Three other patients developed early sensitivity reactions and their treatment was discontinued. Oral dosage was initially 2 Gm. followed by 1 Gm. daily for 13 days, for a total of 15 Gm. One of the 25 patients developed dermatological complications after the course of treatment. It is estimated that 75% of the 28 cases had a satisfactory clinical response. No hematological ill effects were noted, but an unexplained rise in the platelet count was observed. In 3 patients, the finding of hyaline casts unassociated with persistent albuminuria could represent minor renal tubular irritation due to the drug. In 50% of the patients, it was felt that pus in the urine was controlled or lessened. The ability of sulfamethoxypyridazine to produce a rapid and prolonged plasma level appears to be unlike other sulfonamides.

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For protection from poison ivy and oak and relief of itching in ivy and oak poisoning.
DIRECTIONS—For protection, apply generously to skin before exposure and after each washing. For relief, cleanse affected area and apply generously three or four times daily. Temporary stinging sensation may follow application. Discontinue use if stinging persists. Easily removed with water.
WARNING—Should not be applied to extensive, or raw, or oozing areas or for a prolonged time except as directed by a physician.
SHAKE WELL BEFORE USING
FOR EXTERNAL USE ONLY
Stock 22-224-39
T4088
PARKE, DAVIS & COMPANY
DETROIT, MICHIGAN, U.S.A.

To win more sales and friends during poison ivy season, feature ZIRADRYL, compounded *specifically* for prevention and treatment of "ivy and oak" dermatoses. ZIRADRYL controls local allergic reaction by relieving itching and by neutralizing plant toxins—brings rapid and welcome comfort to your customers. Be sure your stock of ZIRADRYL is complete enough to ring up *all* the sales. Order today.

ZIRADRYL Cream is supplied in 1-oz. tubes.
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MEDICAMENTA VERA · P D & CO.

33158

Prescription Practice

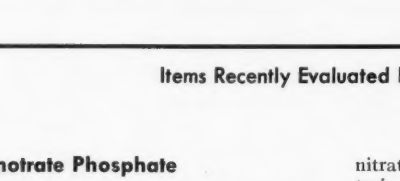
New and Nonofficial Drugs

by Samuel W. Goldstein

Items Recently Evaluated by the American Medical Association Council on Drugs.

Aminotrate Phosphate

Metamine (Leeming); **Nitretamin** (Squibb); Triethanolamine trinitrate diphosphate.



Actions and Uses. Aminotrate phosphate, an organic nitrate compound, produces a mild but persistent vasodilating effect on smooth muscle, especially that of the smaller blood vessels of the postarteriolar vascular bed. As with other agents in this category, this effect is believed to be dependent on the release of nitrate ion in the body. The drug also produces some degree of coronary vasodilation as indicated by its ability to improve blood supply and to relieve myocardial ischemia in the isolated rabbit heart. In human patients, clinically demonstrable effects referable to coronary vasodilation are not apparent until some time after administration of the drug. Thus, aminotrate phosphate is considered to be much slower acting than either glyceryl trinitrate (nitroglycerin) or amyl nitrite. On the other hand, its coronary vasodilating effects are much more prolonged that those produced by either of these agents. In contrast to most organic nitrates, aminotrate phosphate does not, in therapeutic doses, appreciably lower blood pressure or cause reflex tachycardia.

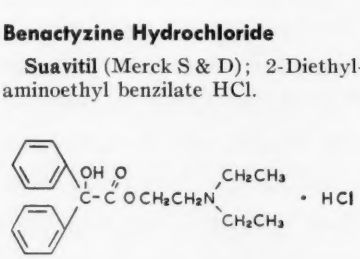
Aminotrate phosphate has been used prophylactically in the hope of preventing attacks of angina pectoris in patients subject to this disorder. Although few of the clinical reports available to date are well controlled, it is the impression of most observers that the drug is beneficial in reducing the frequency and severity of anginal attacks in some patients. However, therapeutic response to the drug appears to be variable and unpredictable; whereas some patients experience decided improvement under therapy, many others obtain no relief whatsoever. Although it is not possible to determine the precise percentage of patients in whom a favorable response might be expected, currently available evidence suggests that this will not exceed 50% and may be considerably less. Aminotrate phosphate shows about the same order of effectiveness as pentaerythritol tetranitrate. Because of its slow onset of action, aminotrate phosphate is not suitable for the immediate relief of anginal pain and is not intended to replace glyceryl trinitrate for this purpose.

Aminotrate phosphate appears to be better tolerated than most of the other nitrates used in the therapy of angina pectoris. Thus, the headaches, dizziness, gastric upset, nausea and vomiting, and palpitation which frequently complicate therapy with the other agents are encountered only infrequently. Although methemoglobinemia is a rare complication of nitrate therapy, aminotrate phosphate is believed to be safer in this respect for patients with anemia. Aminotrate phosphate increases intraocular pressure and is contraindicated in the presence of glaucoma.

Dosage. Aminotrate phosphate is administered orally. Although development of tolerance has not been reported, such an effect is to be expected on the basis of previous experience with other long-acting nitrates and physicians should be on the alert for it. Present evidence suggests that the dosage for aminotrate phosphate can remain constant for considerable periods without loss of effect. For the prophylaxis of angina pectoris, the usual daily dose is 8 to 16 mg. taken in divided doses before meals and before retiring. Somewhat larger doses have occasionally been employed. There may be no significant effect before the third day of administration, and a period of a week or more may elapse before maximal effects are apparent.

Benactyzine Hydrochloride

Suavitil (Merck S & D); 2-Diethylaminoethyl benzilate HCl.



Actions and Uses. Benactyzine HCl, a diphenylmethane, is an anticholinergic compound with the same actions and effects but with approximately only one-fifth to one-fourth the activity of atropine. Benactyzine, however, usually produces an effect on the central nervous system with doses that elicit little or no peripheral effects. The mechanism of central action is not known, although observations in experimental animals tend to support the assumption that the drug acts on the hypothalamus in such a manner as to raise the threshold of emotional reaction to external stimuli. In rats subjected to mental stress, benactyzine increases the number of conditioned responses to a fixed stimulus. In normal human test subjects, therapeutic doses produce prompt subjective effects variously expressed as retardation of mental activity, blocking of thought, and feeling of muscular relaxation. Dizziness and ataxia may also occur. Objectively, the electroencephalogram shows a reduction in normal rhythm and sometimes abolition of alpha waves. This abolition coincides with the height of subjective effects. Because the drug does not exhibit sedative or hypnotic action and does not affect body temperature or blood pressure, it is not considered a tranquilizing agent in the sense in which that term applies to drugs that exert a depressant action.

Benactyzine HCl is proposed for clinical use as a psychotherapeutic agent in the management of psychoneurotic disorders with anxiety reaction, obsessive-compulsive reaction, or mild depressive reactions. In general, it is stated that optimal benefits are more likely to occur in patients whose attitude is cooperative, whereas patients with a hostile attitude may deteriorate under therapy. Also, short-term neuroses which may have remissions tend to respond better than chronic, fixed disorders. It must be borne in mind that, as with certain other agents, psychoneurotic manifestations in some patients will occasionally be enhanced after use of benactyzine. Reports of clinical investigations are somewhat contradictory regarding effectiveness of the drug in the conditions for which it is proposed. Some observers feel that it is less effective than other psychotherapeutic drugs but may be more effective than the barbiturates in dealing with psychoneurotic symptoms. The drug appears to have practically no effect in the management of psychotic symptoms. On the basis of currently available evidence, the use of benactyzine appears to have been followed by improvement in about one-half of the patients in whom it was employed, but more conclusive clinical observations are necessary to establish its ultimate usefulness.

Benactyzine HCl appears to have a low toxicity in both animals and man. In human subjects, experimental doses of 60 mg. daily for one month, or 90 mg. as a single dose, did not reveal serious toxic effects. The effect of the drug appears promptly after administration, and perceptible effects produced by a single oral dose of 5 mg. disappear within 1 to 1.5 hr. The drug is eliminated rapidly, chiefly in the urine. The brain appears to retain the drug longer than other tissues, but there is no apparent residual action or accumulation.

Because of its anticholinergic nature benactyzine HCl may give rise to side-effects similar to those of atropine. Side-effects so far reported include dryness of

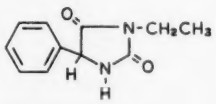
the mouth, metallic taste, blurred vision, inhibition of accommodation, dizziness, giddiness, ataxia, nervousness, palpitation, nausea, diarrhea, general apathy, and indifference. When present, such effects may disappear with slight reduction in dosage. The chief subjective complaints are usually diminished ability to concentrate and a sense of depersonalization or unreality. In some patients, these may be sufficiently disturbing to warrant cessation of therapy to avoid intensifying the neurotic state. Other patients may complain of excessive muscular relaxation, with heaviness and paresthesia of the limbs. Prior explanation of such effects may reduce the unfavorable response in some patients.

Benactyzine HCl is contraindicated in patients who are frankly hostile. The drug is also considered to be contraindicated in glaucoma because of its anticholinergic properties. Benactyzine HCl should not be administered to patients who are to receive electroshock therapy. As with all new drugs, physicians should be alert to the possibility of untoward effects, which may appear with more extensive use.

Dosage. Benactyzine HCl is administered orally. The suggested initial oral dosage for adults is 1 mg. three times daily for two or three days. If such doses elicit no therapeutic response, they may be increased gradually to 3 mg. three times daily. Administration after meals is considered desirable to minimize the occurrence of side-effects arising from unusually prompt absorption. Should side-effects occur at a particular dosage, it should be reduced. Dosages totaling more than 10 mg. daily are not considered desirable for any patient. However, until longer experience has been gained, the dosage of the drug should be considered tentative, and all patients observed carefully for the development of untoward effects.

Ethotoin

Peganone (Abbott); 3-Ethyl-5-phenylhydantoin.



Actions and Uses. Ethotoin, a hydantoin-type anticonvulsant, is useful for the treatment of grand mal epilepsy. The therapeutic dosage of ethotoin is greater than that of many commonly used anticonvulsants, such as diphenylhydantoin, primidone, or phenobarbital. On the other hand, ethotoin is considerably less toxic than any of the foregoing drugs and, unlike the barbiturates, does not produce sedation at therapeutic dosage levels. When used alone in grand mal epilepsy, it generally brings about a reduction in seizure frequency but may not always afford complete seizure control. It may be useful as a substance to try first, particularly if immediate control of grand mal seizures is not essential for social or economic reasons. If full control of the seizures is not obtained by use of ethotoin alone, it may be combined with other anticonvulsant drugs. In certain patients, it will control seizures that are refractory to other anticonvulsant agents. Ethotoin is of limited usefulness in psychomotor seizures. It has been tried in cases of petit mal and petit mal variant seizures. Although its usefulness is limited in this type of epilepsy, it may bring about improvement in some cases.

Ethotoin appears to have fewer side-effects than the other hydantoin derivatives in common use as anticonvulsants. In clinical trials over long periods of time and with high dosage, no evidence of kidney, liver, or hematopoietic damage has been observed. Only rare instances of ataxia or gum hyperplasia have occurred, and these reactions were found in patients undergoing treatment with other hydantoin derivatives. Occasionally encountered side-effects include skin rash, dizziness, anorexia, nausea and vomiting, diplopia, drowsiness, numbness headache, tension, epigastric burning nystagmus, gastrointestinal upset, and depression. Many of these side-effects respond promptly to a reduction in dosage; gastric distress may be minimized if the drug is administered with food. Although ethotoin appears to be a substance of low toxicity, the possibility of serious untoward reactions should be kept in mind, pending the accumulation of more clinical experience.

Dosage. Ethotoin is administered orally in dosages which must be individualized according to the response of the particular patient and the degree of control achieved with other anticonvulsant drugs. The average dose for adults is 2 to 3 Gm. per day, given after food, in four to six divided doses. Dosages below 2 Gm. a day have proved ineffective in most adult patients. It is generally advisable to avoid a high initial dose. The recommended procedure is to begin treatment with not more than 1 Gm. daily and to increase the dose gradually over a period of several days, in order to determine the patient's individual tolerance and the optimal dosage. Doses as high as 5 Gm. a day have been used but are seldom necessary. When doses this size are required, it is considered wise to supervise the patient more closely.

Doses of 0.5 to 1 Gm. daily have been found effective in many children. However, amounts of 2 Gm., or more rarely 3 Gm., have been used successfully. An appropriate dosage will depend to some extent on the age and weight of the child and on the type and dose of concomitant medication. As with adults, it is considered advisable to start with a comparatively low dosage which may be increased gradually.

If the patient is already receiving another anticonvulsant medicament, it should be continued when ethotoin is started. Usually the dosage can be gradually reduced as that of ethotoin is increased, until ethotoin has replaced the previous medicament or until the optimal dosage of both anticonvulsants has been established. When ethotoin is combined with other hydantoins, the dose of the latter should be gradually reduced in order to avoid ataxia and other side-effects which occur with high doses of such other hydantoins.

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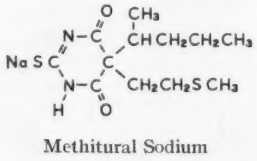
Methitural Sodium

Neraval Sodium (Schering); 5-(1-Methylbutyl) - 5 - [2 - (methylthio)-ethyl]-2-thiobarbiturate.

Actions and Uses. Methitural sodium, an ultra short-acting thiobarbiturate, is used as an intravenously administered anesthetic agent. Since its potency is less

 Continued from page 505

than that of thiopental sodium, larger doses are required to produce the same degree of anesthesia. Like other thiobarbiturates, methitural is stored temporarily



Methitural Sodium

in body fat depots and subsequently is transported to the liver, where it is metabolized. Because its metabolic degradation and excretion proceed more rapidly than those of thiopental, cumulative effects are less and awakening time is more rapid. These differences are more apparent when larger amounts of the drug are used for longer operative procedures. Anesthetic induction time is longer with methitural and should proceed more slowly than with thiopental.

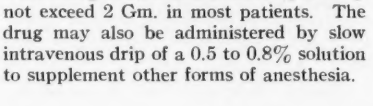
Methitural sodium is employed for the same purposes as the sodium salts of thiopental, hexobarbital, and thiamylal. Thus, it may be used as the sole anesthetic agent in short operative procedures, for induction prior to the administration of gaseous general anesthetics in long operations, and as a supplement to local anesthetics during regional and spinal anesthesia. The drug does not provide muscle relaxation but is compatible with and may be used in conjunction with curare and curariform drugs. Belladonna alkaloids should be administered as premedication. Once sufficient experience has been gained in the use of methitural sodium, general anesthesia with this agent appears to be as smooth and as satisfactory as that obtained with thiopental. Its diminished cumulative effects and rapid awakening time are considered advantageous. There is also some indication that methitural produces somewhat less postanesthetic "hang-over" than the other thiobarbiturates. On the other hand, parasympathomimetic effects, such as hiccups, coughing, and laryngospasm, seem to be greater with methitural than with thiopental. These effects plus increased induction time and venous irritation with concentrated solutions constitute disadvantages.

Side-effects to methitural sodium are those of intravenously administered barbiturates in general and include hypotension, respiratory depression, hypoxia, laryngospasm, and excitement. The drug should be used with caution in patients with dyspnea, asthma, respiratory obstruction, severe hypotension or hypertension, myocardial disease, cardiac decompensation, anemia, and extreme obesity. It is contraindicated in patients with severe hepatic dysfunction. Methitural should be administered only by anesthesiologists competent in the use of thiobarbiturates in intravenous anesthesia; equipment and facilities for providing oxygen and insuring adequate respiration should be available at all times.

Dosage. Methitural sodium is administered intravenously. Except for concentration and dosage, the techniques and procedures for the intravenous administration of methitural sodium are the same as for other thiobarbiturates. For intermittent administration, the most satisfactory concentration appears to be a 2.5% solution; 5% solutions have been used, but at this concentration venous irritation is likely to be encountered. For induction of general anesthesia in adults, 4 or 5 cc. of a 2.5% solution is injected at intervals of 30 to 60 seconds. Although the rate of injection and dosage vary, the administration of 200 to 600 mg. in this manner is usually sufficient to induce anesthesia in most patients. After induction, small maintenance doses (2 or 3 cc. of a 2.5% solution) may be injected at intervals governed by the usual signs relating to depth of thiobarbiturate anesthesia. The total dosage of methitural should probably not exceed 2 Gm. in most patients. The drug may also be administered by slow intravenous drip of a 0.5 to 0.8% solution to supplement other forms of anesthesia.

Parethoxycaine Hydrochloride

Intracaine Hydrochloride (Squibb); 2-Diethylaminoethyl *p*-ethoxybenzoate HCl.



Actions and Uses. Parethoxycaine HCl is a local anesthetic agent with actions similar to those of procaine. Its acute toxicity in experimental animals is slightly more than that of procaine. Parethoxycaine is rapid-acting, and the duration of anesthesia is slightly longer than that produced with an equal amount of procaine. In animal experiments, the drug appears to be somewhat more potent, mg. for mg., than procaine. Except for these minor quantitative differences, parethoxycaine HCl behaves pharmacologically in essentially the same manner as procaine HCl.

Parethoxycaine HCl is proposed for use in regional anesthesia by either infiltration or nerve block techniques, including dental procedures, for single injection or continuous spinal anesthesia, for peridural segmental anesthesia, for caudal anesthesia in obstetrics, and for topical anesthesia in cystoscopic, bronchoscopic, or endotracheal procedure. Clinical experience with the drug for all of the foregoing procedures has been too meager to permit definite conclusions as to its efficacy and safety. On the basis of limited studies conducted almost two decades ago, the drug appears to be about as satisfactory as procaine for those techniques involving parenteral injection, but it does not possess any advantages which would distinguish it from procaine, lidocaine, tetracaine, or any of the other local anesthetic agents that have undergone much more extensive clinical investigation.

When the drug is employed by the low spinal route, the onset of sensory anesthesia appears to be somewhat more rapid than with procaine. However, the duration of such anesthesia is not proportional to dose. Thus, in spite of its slightly increased potency, dosage of parethoxycaine for long operative procedures approaches that of procaine. The drug should not be used as a spinal anesthetic for operations above the lower abdomen. There is no clinical evidence to support its use for topical or surface anesthesia of mucous or other membranes.

On the basis of limited clinical experience, parethoxycaine appears to be of about the same order of toxicity as procaine. The drug does not produce irritation at the site of injection but does elicit the same type of effect on blood pressure, pulse, and respiration which is observed after administration of procaine and similar local anesthetic agents. It should therefore be employed with the same discretion as all other agents in this category. (See the general statement on local anesthetics in NND.)

Dosage. For regional anesthesia, the concentration of parethoxycaine HCl solution and the amount injected vary according to clinical indications and the duration and extent of anesthesia desired. A 0.3 to 1% solution is proposed for infiltration anesthesia, whereas a 1 to 1.5% solution is suggested for nerve block techniques. For dental procedures, by either infiltration or nerve block techniques, a 1% solution has been used. Epinephrine HCl, in a final dilution of 1:200,000, may be added when desired to solutions of parethoxycaine HCl used in regional anesthesia. For single injection spinal anesthesia, a 2.5% solution may be employed; dosage varies from 0.6 to 2 cc. (15 to 50 mg.). A 2.5% solution of the drug in cerebrospinal fluid is employed for continuous spinal anesthesia; the suggested initial dose is 4 to 6 cc. (100 to 150 mg.) followed by 1 to 2 cc. (25 to 50 mg.) as needed. For peridural segmental anesthesia, 2.5 cc. (50 mg.) of a 2% solution is administered. Concentrations of 1.5% are suggested for caudal anesthesia. The proposed dosage for topical anesthesia of mucous membranes, as in cystoscopic, bronchoscopic, and endotracheal procedures, is 5 cc. of a 2 to 5% solution. Since there is no evidence to confirm the usefulness of parethoxycaine as a topical anesthetic, the foregoing proposed dosage for this purpose should be considered experimental.

Solutions of parethoxycaine HCl become cloudy when exposed to air; hence, suitable dilutions of the sterile crystalline drug should be freshly prepared and used at once.

℞ Information Service

Camphor Para-Chlorophenol

Please give us any information on or the source of the compound camphor parachlorophenol.—P. Z., Massachusetts.

There does not appear to be a chemical compound called camphor parachlorophenol. The requested item is probably camphorated parachlorophenol, which is a mixture of *p*-chlorophenol, 350 Gm., and camphor, 650 Gm., official in N.F. X. It is used as a dental antibacterial agent. The *p*-chlorophenol is manufactured by the Dow Chemical Company and by the Monsanto Chemical Company.

Migril and Migral

Your item in THIS JOURNAL, **19,** *236 (April 1958) gives the formula for Migril (British) and suggests that B. W. & Co. (U.S.A.) might supply it. The product marketed by B. W. & Co. (U.S.A.) is not exactly the same and is called Migral.—C.A.P., New York.*

Each Migral tablet contains ergotamine tartrate, 1 mg.; cyclizine HCl (Marezine), 25 mg.; and caffeine, 50 mg. The British product, Migril, contains twice as much of the same ingredients in each tablet.

Palfium

We would like to have some information about a drug called Palfium.—R. Galley, Virginia.

Palfium is referred to in the recent literature as R 875 and is chemically *d*-2,2-diphenyl-3-methyl-4-morpholinobutyrylpyrrolidine. Its synthesis was reported by P. A. J. Janssen in *J. Am. Chem. Soc.*, **78,** 3862(1956); and comparative tests reported by P. A. J. J. and A. H. Jagenau in *J. Pharm. and Pharmacol.*, **10,** 14(1958), indicated that in rats R 875 was several times as active an analgetic as morphine and had a slower rate of development of tolerance. The drug is available as Palfium from Laboratoria Pharmaceutica, Dr. J. C. Janssen, Turnhout, Belgium.

Riboflavin Solution

How can a stable solution of riboflavin, 5 mg./teaspoonful, be prepared in the pharmacy?—M. Y., Illinois.

Research studies by drug manufacturers have provided solubilizing agents for riboflavin solutions and also soluble derivatives of the vitamin. Their pharmaceutical research teams have developed useful stable dosage forms. Similar research would be required to produce such products in the pharmacy. A patent by J. Charney [assigned to Wyeth, Inc., see *Chem. Abstr.*, **42,** 9094 (1948)], states that solutions suitable for oral or parenteral administration and containing 0.15%–0.3% of riboflavin, alone or with other substances, are prepared using 1% vanillin as the solubilizing agent in water or propylene glycol. Another patent by S. D. Upham [assigned to American Cyanamid Co., see *Chem. Abstr.*, **42,** 9094(1948)], indicates that stable, sterile, clear solutions of riboflavin citrate in propylene glycol contain up to 40 mg. per cc. and are suitable for oral or parenteral use. Any solution prepared in the pharmacy should be assayed at designated intervals to determine the stability of the vitamin in the product.

℞ Symbol—Origin

Do you have any information on the origin of the symbol ℞?—H. L. P., New York.

Most references to the symbol ℞, which is used as a superscription to denote "recipe" in a prescription, indicate that its form is derived from the symbol that was used to represent the mythological Jupiter (e.g., "Remington's Practice of Pharmacy," 11th ed., 1956, p. 1413). The editor of *Chemist and Druggist*, (Feb. 15, 1877), p. 48, disagreed with this explanation. Also in *Chemist and Druggist* (July 25, 1891), p. 149, the editor disputed the arguments advanced by Dr. O. A. Wall (*ibid.*, p. 159) in favor of the Jupiter symbol relation to ℞. The editor quoted from, perhaps the earliest published reference on this subject, Dr. Paris's "Pharmacologia"; "It is not, perhaps, generally known that the character which we at this day place at the head of our prescriptions, and which is understood and supposed to mean 'recipe,' is a relict (*sic*) of the astrological symbol of Jupiter." He did not agree with Dr. Paris's statement, nor with Dr. Wall who favored it. The accuracy of this explanation is disputed also by A. C. Wootton in his "Chronicles of Pharmacy," vol. 2, 1910, pp. 303–305.

It would appear that no indisputable explanation can be given as to how or when the ℞ symbol originated. It definitely did not appear suddenly and probably was not recorded before the middle ages. But the idea of its relation to Jupiter is intriguing, and this is probably why the explanation has had such wide acceptance.

Sulfadiazine Sodium Solution—Dilution

Dilution of concentrated solution of sulfadiazine sodium (2.5 Gm./5 cc. in ampul) gives a solution in which a precipitate forms in 24 hrs. We have used distilled water and buffer solutions. Can you help us?—R. R. C., Pennsylvania.

Sulfadiazine sodium solutions must have a pH above 8.3 at all times. Even then absorption of carbon dioxide can cause a precipitate of sulfadiazine. The carbon dioxide can be absorbed from the air or it can be introduced in the dilution liquid. Dilution should be made only with carbon dioxide-free water or buffer solution (freshly boiled or degassed), and the closure of the container should be tight or have a CO_2 trap.

Suspending Agents

The following prescription does not yield a good product. Can you offer a suggestion?—J.G.A., Canada. Ol. sandalwood 20 min., peppermint water 4 fl. dr., pot. acetate 40 gr., Liq. Potassa (5% KOH soln.) 30 min., chloroform spt. 1.5 fl. dr., aloes tr. 30 min., codeine 1.5 gr., tragacanth mucilage q.s., and Ess. Caroid ad 3 oz.

The prescription obviously must be compounded as a suspension and the suspending action of the mucilage of tragacanth may be augmented by addition of 1% of a clay type suspending agent such as bentonite, Veegum, or activated attapulgite (see THIS JOURNAL, **19,** 85(Feb. 1958).

Trifosfaden and Gerobion—Sources

Could you inform us of the manufacturers of the products Trifosfaden and Gerobion?—S. J. G., Washington, D.C.

Trifosfaden is manufactured by the Institute Sieroterapico Italiano, located in Naples. It is supplied as an injection containing 5 mg. of adenosine triphosphate in each vial.

Gerobion is a complex multivitamin plus mixture supplied by Merck and Company of Darmstadt, Germany. Each tablet contains vitamin A, 5000 units; vitamin D_3, 0.025 mg.; alpha-tocopheryl acetate, 4 mg.; vitamin B_1, 4 mg.; riboflavin phosphate, 3 mg.; nicotinamide, 25 mg.; choline bitartrate, 50 mg.; inositol, 50 mg.; and magnesium oleate, 50 mg.

- postoperatively
- in pregnancy when vomiting is persistent
- following neurosurgical diagnostic procedures
- in infections, intra-abdominal disease, and carcinomatosis
- after nitrogen mustard therapy

for nausea and vomiting

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ANTIEMETIC DOSAGE:
Intravenous: 8 mg. average single dose
Dosage range 2-10 mg.
Intramuscular: 15 mg. average single dose
Dosage range 5-15 mg.
If subsequent parenteral dose is needed, one-half the original dose will usually suffice
Oral: 10-20 mg. initially; then 10 mg. t.i.d.

SUPPLY:
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Oral tablets – 10 mg., 25 mg., 50 mg., in bottles of 50 and 500

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Erythrocin–I.M. Injection

Description: Each cc. of injection contains 50 mg. of Erythrocin (erythromycin) as the ethyl succinate in polyethylene glycol.

Indications: In infections caused by organisms sensitive to erythromycin. In severe infections can be used after initial intravenous therapy with Erythrocin lactobionate.

Administration: Intramuscularly, 100 mg. every 6 hrs.; in severe cases, every 4 hrs. For children, adjust according to age and weight. Must not be given i.v. or s.c. or mixed with other antibiotic solutions.

Form Supplied: 2-cc. ampuls and 10-cc. multiple-dose vials.

Source: Abbott Laboratories, North Chicago, Ill.

Kantrex Capsules
Kantrex Solution

Description: Each cc. of injectable solution contains 250 mg. or 333 mg. kanamycin as the sulfate. Each capsule contains 500 mg. of kanamycin.

Indications: For control of infections due to Gram-positive and Gram-negative pathogenic organisms, especially staphylococci resistant to the antibiotics, and infections of the urinary and respiratory tracts. Orally for presurgical intestinal antisepsis since it is poorly absorbed from the gut, and for control of gastrointestinal tract infections caused by shigella and salmonella.

Administration: Intramuscularly, 1 to 2 Gm. daily in 2 to 4 divided doses.

Form Supplied: Solution, 2-cc. vials (500 mg.), 3-cc. vials (1 Gm.); capsules, bottles of 20 and 100.

Source: Bristol Laboratories, Syracuse, N.Y.

Kayexalate Resin Powder

Description: A golden-brown powder of sodium polystyrene sulfonate, a cation exchange resin with an exchange capacity (Na for K) of 3.1 mEq. of potassium per Gm. of resin.

Indications: For treatment of hyperkalemia as in oliguria or anuria due to acute tubular necrosis.

Administration: 15 Gm. (4 heaping teaspoons) one to four times daily in water (150 to 200 cc.) introduced into the stomach through a plastic polythene tube or mixed with a diet of 400 Gm. glucose and 100 cc. peanut or olive oil diluted to 1 liter with distilled water, gum acacia being used to emulsify the oil. It also may be given, although less effectively, by enema: 30 Gm. (8 heaping teaspoons) as an emulsion in 100 cc. of 2 per cent methylcellulose and 100 cc. of water. The emulsion should be agitated gently during administration. This should be retained for from 6–10 hrs., if possible. The duration of therapy required with these doses may be 3 days or more. The drug should be discontinued when serum potassium level reaches from 4 to 5 mEq./L. In those who require resin therapy for more than a 3-day period, the serum calcium level should also be determined, and if necessary, calcium should be administered, either orally or intravenously. Serious potassium deficiency may occur if the effective dosage range is exceeded; thus, it is imperative to determine the daily serum potassium levels. Constipation may be encountered and should be treated with the usual mild laxatives. In the presence of lowered potassium blood levels, the action of digitalis, and particularly its toxic effect, is likely to be exaggerated.

Form Supplied: 1-lb. containers.

Source: Winthrop Laboratories, New York 18, N.Y.

Megimide Injection

Description: Each ampul contains 50 mg. of megimide (β-ethyl-β-methyl glutarimide) in 10 cc. of saline.

Indications: As a central nervous system stimulant in the management of barbiturate intoxication and barbiturate and thiobarbiturate anesthesia.

Administration: Intravenously in intermittent doses as required in each case of anesthesia: 50 mg. may be effective, although more profound depression may require 100–200 mg. to reduce the depth of anesthesia. Overdosage may cause convulsions, and a solution of a short-acting barbiturate should be available as an antidote.

Form Supplied: 10-cc. ampuls.

Source: Abbott Laboratories, North Chicago, Ill.

Murel Injection, Murel Tablets, Murel w/Phenobarbital Tabs.

Description: Each cc. of injection contains 10 mg. Murel (valethamate bromide). Each tablet contains 10 mg. of the drug alone or with 1/4 gr. phenobarbital.

Indications: For spasms of the gastrointestinal tract, genitourinary tract, biliary tract, and in peptic ulcer.

Administration: As directed by physician.

Form Supplied: Injection, 5-cc. vials; tablets, both forms in bottles of 100 and 1,000.

Source: Ayerst Laboratories, New York 16, N.Y.

Other New Products

Chemicals, clinical trial drugs, diagnostic aids, equipment for the retail and hospital pharmacy.

Bremil, Liquid Infant Food

A liquid infant food formula, marketed by the *Borden Co.*, after dilution with water (1:1), contains in each quart: vitamin A, 2,500 u.; D, 800 u.; C, 50 mg.; B_1, 0.4 mg.; riboflavin, 1 mg.; niacin, 6 mg.; and pyridoxine HCl, 0.4 mg.; with water 87.5%, protein 1.5%, fat 3.5%, carbohydrate (lactose) 7%, minerals (Ca:P ratio 1.5:1) 0.5%, and supplies 20 calories per fl. oz. The suggested starting dilution with water is 1:3. Supplied in 13-fl.oz. can.

Capsebon Suspension

A suspension containing cadmium sulfide 1% in a liquid detergent base, for use in the treatment of seborrheic dermatitis of the scalp, is marketed by

Continued on page 510

All actively promoted items on which information has been received in the past thirty days are reported here. Manufacturers are urged to send details of their new products as early as possible, so that pharmacists through these pages will have full information before products are detailed to the physician. For inclusion in this department, for which there is no charge, send descriptive literature to the Editor, New Prescription Products Department, JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION, 2215 Constitution Avenue, N.W., Washington 7, D.C.

Pitman-Moore Co. It is applied as a shampoo using 1–2 teaspoonfuls, with water if necessary to work up a lather, allowed to remain 5–10 minutes then rinsed thoroughly.

Engran Baby Drops

A flavored, aqueous, multiple vitamin supplement is marketed by *E. R. Squibb & Sons* to supply infants with 9 essential vitamins. Dosage is 0.3 or 0.6 cc. mixed with foods or dropped on the tongue. Supplied in 15-cc. and 50-cc. bottles with graduated "Flexidose" droppers.

Esdone Tablets

Tablets containing, in each, dienestrol, 0.25 mg., and methyltestosterone, 5 mg., are marketed by *Lloyd, Dabney & Westerfield* for use in the basic treatment or management of the geriatric patient. Dosage, initially, 1–3 tablets daily for 2 weeks; maintenance, 1 tablet daily. Supplied in bottles of 100.

Feosol Spansule Capsules

Sustained release capsules containing, in each, 150 mg. exsiccated ferrous sulfate are marketed by *Smith Kline & French* for use in treatment of iron-deficiency anemias. The Spansule form is better tolerated than ordinary oral iron by convalescents, the elderly, and those with poor digestive processes or gastrointestinal complaints, particularly patients with peptic ulcer. Dosage, 1 capsule daily for mild cases; twice daily for more severe iron-deficiency anemias or where more rapid hemoglobin regeneration is needed. For young children, the contents of 1 capsule in a spoonful of soft, cool food. Supplied in bottles of 30.

Fermatin Capsules

Capsules containing, in each: ferrous sulfate, 200 mg.; folic acid, 1.5 mg.; cobalamin concentrate, 7.5 mg.; ascorbic acid, 75 mg.; D-sorbitol, 150 mg.; and Maalox (Mg-Al-hydroxides), 200 mg., are marketed by *Wm. H. Rorer, Inc.* for use with asthenic, easily fatigued, elderly, convalescent, pregnant, adolescent, anemic patients. Dosage, 1 capsule twice daily with or after meals. Supplied in bottles of 100 and 500.

Gradumet Tral Tablets
Gradumet Tral w/Phenobarbital Tabs.

Abbott Laboratories has marketed a slow release dosage form (Gradumet) consisting of inert plastic with interstitial passages impregnated with the drug. The drug is released over an 8 to 12-hr. period. Each tablet-shaped Gradumet contains 50 mg. Tral (hexocyclium methylsulfate) (yellow) or 50 mg. Tral with 30 mg. phenobarbital (blue). Dosage as anticholinergic agent is 1 tablet twice daily before lunch and bedtime or before breakfast and dinner. Both forms are supplied in bottles of 50 and 500. (See page 227.)

Lorfan Pediatric Ampuls

Roche Laboratories has marketed the narcotic antagonist Lorfan (levallorphan) tartrate as an injection (s.c., i.m., or i.v.) containing 0.5 mg./cc. It is intended for treatment of narcotic-induced respiratory depression in the newborn. Levallorphan usually acts within 1 minute and its effect lasts for 2–5 hrs. Dosage is determined by the physician. Supplied in 1-cc. ampuls, in boxes of 6 and 25.

Margel Deltabs

Margel Deltabs, which replace alumina gel tablets-MRT, are marketed only in bottles of 125 tablets with a dispenser, by *Marvin R. Thompson, Inc.*

Margonovine Delpuls and Deltabs

Marvin R. Thompson, Inc. has marketed 1-cc. ampuls (Delpuls) containing, in each, 0.2 mg. ergonovine maleate, and tablets (Deltabs) containing 0.2 mg. of the drug in each tablet. Supplied in boxes of 25 and 100 Delpuls and bottles of 100 and 1,000 Deltabs.

Niatric Elixir

An elixir containing, in each 5-cc. teaspoonful: pentylenetetrazol, 100 mg.; nicotinic acid, 50 mg.; and ascorbic acid, 100 mg.; with alcohol 15%, is marketed by *B. F. Ascher & Co.* for use with confused, forgetful, depressed, older patients suffering symptoms of cerebral vascular damage. Dosage, 1–2 teaspoonfuls 3 times daily. Supplied in pint bottles.

Norisodrine Sulfate Starter Set

Abbott Laboratories has marketed a convenient set for starting patients on bronchial inhalation therapy for asthma. The set includes Aerohaler, bag, and vial of 3 cartridges of Norisodrine (isoproterenol) sulfate powder, with instructions for use. Dosage, for mild asthma, 2–4 normal inhalations of Norisodrine 10%; for moderate to severe asthma, 2–4 normal inhalations of Norisodrine 25%.

Polymagma Plain Suspension

A suspension containing, in each 30cc.: Claysorb (activated attapulgite), 3 Gm., and pectin, 270 mg., in an alumina gel vehicle is marketed by *Wyeth Laboratories* for use in the symptomatic treatment of nonspecific diarrheas. Differs from "Polymagma suspension" by omission of dihydrostreptomycin and polymyxin B sulfate. Dosage is 2 tablespoonfuls initially, and 1 tablespoonful after each bowel movement; children, 1 or more teaspoonfuls according to age. Supplied in 12-oz. bottles.

Suitrate Liquid

The *E. L. Patch Co.* has marketed a liquid containing, in each cc.: sodium phenobarbital, 15 mg., and methscopolamine bromide, 2.5 mg., and alcohol 15%, for use as an antispasmodic and sedative in the treatment of gastrointestinal disorders. Dosage, maintenance, 10–15 drops before meals and at bedtime. Do not give to patients with glaucoma, and use cautiously in patients with pyloric obstruction, prostatic hypertrophy, or other urinary tract obstructions. Supplied in 4-oz. and pint bottles.

Teserene Tablets

Tablets containing, in each: dienestrol, 0.25 mg.; methyltestosterone, 5 mg.; and reserpine, 0.1 mg., are marketed by *Lloyd, Dabney & Westerfield* for use in management of the male and female climacteric and the disturbed geriatric patient. Dosage, initially, 1–3 tablets daily for 2 weeks; for menstruating women, give in cyclic periods of 20 days treatment and 10 days rest; for postmenopausal women and for men in the climacteric, initially, 1–3 tablets daily then maintain on 1 tablet in morning and 1 at night. Supplied in bottles of 100.

Trilafon Repetab Tablets

Tablets containing 8 mg. Trilafon (perphenazine), with 4 mg. in the outer layer and 4 mg. in the core separated by a laminated barrier which defers release of the cored portion, are marketed by *Schering Corp.* Dosage of the tranquilizing and antiemetic drug depends on the patient but the physician should not give more than 64 mg. as a total daily dose. Supplied in bottles of 30 and 100 tablets. Available also as ordinary tablets, injection, and syrup.

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